

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 5,9 U26
Edition : 16.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 6/12F1400 R195-4
Type number : 0 460 426 123

Customer-specific information
Customer : CDC

Engine : 6 BT 5.9A

Power k: 106
Speed 1/mi: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 027

Opening
pressure bar : 250...253

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,3
(from BDC): +0,02(0,04)

Start of delivery block
Piston stroke mm: 2,35
mm: +0,02(0,06)
Outlet : 0

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

AO1

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value mm: 1,9...2,3

Supply-pump pressure:

Speed 1/min: 1000
Charge press. hPa: 1000
Setting value bar: 7,1...7,7

Full-load del. with charge press.:

Speed 1/min: 850
Charge press. hPa: 1000
Del.quantity cm3/
1000H.: 57,0...58,0
Dispersion cm3/ : 4,0
1000H : (4,5)

Full-load del. w/out charge press.:

Speed 1/min : 500
Del.quantity cm3/
1000H.: 44,5...45,5
Dispersion cm3/ : 9,0
1000H.: -

Low-idle speed regulation:

Speed 1/min: 375
Del.quantity cm3/
1000H.: 6,5...10,5

Full-load speed regulation:

Speed 1/min: 1520
Charge press. hPa: 1000
Del.quantity cm3/
1000H: 41,0...47,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 50,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 850
Charge press. hPa: 1000
TD travel mm: 1,1...1,9
mm: (0,8...2,2)
2nd speed 1/min: 1000
Charge press. hPa: 1000

TD travel mm: 1,9...2,3
mm: (1,4...2,8)
3rd speed 1/min: 1400
Charge press. hPa: 1000
TD travel mm: 2,8...3,6
mm: (2,5...3,9)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000
Supply-pump pressure bar: 4,7...5,3
2nd speed 1/min: 1000
Charge press. hPa: 1000
Supply-pump pressure bar: 7,1...7,7
3rd speed 1/min: 1400
Charge press. hPa: 1000
Supply-pump pressure bar: 8,9...9,5

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: -
Overflow : 41...83
quantity cm³/10s: (26...98)
2nd speed 1/min: 1400
Charge press. hPa: 1000
Overflow : 55...138
quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
Charge-air pressure-setting point hPa: 300
Del.quantity cm³/: 50,0...51,0
1000H.: (46,5...54,5)
2nd speed 1/min: 1680
Charge press. hPa: 1000
Del.quantity cm³/: 0,0...3,0
1000H.: -
3rd speed 1/min: 1640
Charge press. hPa: 1000
Del.quantity cm³/: 0,0...15,0
1000H.: -
4th speed 1/min: 1590
Charge press. hPa: 1000
Del.quantity cm³/: 15,0...55,0
1000H.: -
5th speed 1/min: 1520
Charge press. hPa: 1000
Del.quantity cm³/: 41,0...47,0
1000H.: (38,0...50,0)
6th speed 1/min: 1400
Charge press. hPa: 1000
Del.quantity cm³/: 57,5...60,5
1000H.: (56,0...62,0)

7th speed 1/min: 1100
Charge press. hPa: 1000
Del.quantity cm³/: 58,0...61,0
1000H.: (56,0...63,0)
8th speed 1/min: 850
Charge press. hPa: 1000
Del.quantity cm³/: 57,0...58,0
1000H.: (54,5...60,5)
9th speed 1/min: 700
Charge press. hPa: 300
Del.quantity cm³/: 50,0...51,0
1000H.: (46,5...54,5)
10th speed 1/min: 500
Charge press. hPa: 1000
Del.quantity cm³/: 52,0...62,0
1000H.: -
11th speed 1/min: 500
Charge press. hPa: -
Del.quantity cm³/: 44,5...45,5
1000H.: (41,0...49,0)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1400
Del.quantity cm³/: 0...3
1000H.: -

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del.quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 375
Del.quantity cm³/: 6,5...10,5
1000H.: (3,5...13,5)
2nd speed 1/min: 450
Del.quantity cm³/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 230
Charge press. hPa: -
Del.quantity cm³/: -
ind. 1000H.: 65,0
2nd speed 1/min: 400
Charge press. hPa: -
Del.quantity cm³/: -
max. 1000H.: 65,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm	:	-
KF	mm	:	K-OT
MS	mm	:	1,0...1,4
SVS max.	mm	:	2,2
XK	mm	:	21,8...23,8
XL	mm	:	12,8...16,2

Operate control lever after each
manifold-pressure compensator pressure
change.

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 5,9 U14
Edition : 12.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 6/12F1050 R173-11
Type number : 0 460 426 125
Customer Part-No. : 3 915 515

Customer-specific information
Customer : CDC

Engine : 6 BTA

Power k: 124
Speed 1/mi: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 027

Opening
pressure bar : 250...253

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,3
(from BDC): $\pm 0,02(0,04)$

Start of delivery block
Piston stroke mm: 1,85
mm: $\pm 0,02(0,06)$

Outlet : D

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 750
Charge press. hPa: 1000
Setting value mm: 1,5...1,9

Supply-pump pressure:

Speed 1/min: 750
Charge press. hPa: 1000
Setting value bar: 2,9...3,5

Full-load del. with charge press.:

Speed 1/min: 750
Charge press. hPa: 1000
Del.quantity cm³/
1000H.: 94,5...95,5
Dispersion cm³/
1000H : 4,0
1000H : (4,5)

Full-load del. w/out charge press.:

Speed 1/min : 500
Del.quantity cm³/
1000H.: 50,5...51,5
Dispersion cm³/
1000H.: -

Low-idle speed regulation:

Speed 1/min: 375
Charge press. hPa: -
Del.quantity cm³/
1000H.: 8,0...12,0
Dispersion cm³/
1000H.: (7,0)

Full-load speed regulation:

Speed 1/min: 1100
Charge press. hPa: 1000
Del.quantity cm³/
1000H: 73,0...79,0

Start:

Speed 1/min: 100
Charge press. hPa: -
Del.quantity : -
mind cm³/1000H.: 60,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
Charge press. hPa: 1000

TD travel mm: 0,5...1,3
mm: (0,2...1,6)
2nd speed 1/min: 750
Charge press. hPa: 1000
TD travel mm: 1,5...1,9
mm: (1,0...2,4)
3rd speed 1/min: 1050
Charge press. hPa: 1000
TD travel mm: 2,5...3,4
mm: (2,2...3,6)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000
Supply-pump pressure bar: 1,8...2,4
2nd speed 1/min: 750
Charge press. hPa: 1000
Supply-pump pressure bar: 1,5...1,9
3rd speed 1/min: 1050
Charge press. hPa: 1000
Supply-pump pressure bar: 4,3...4,9

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: -
Overflow quantity cm3/10s: 41...83
(26...98)
2nd speed 1/min: 1050
Charge press. hPa: 1000
Overflow quantity cm3/10s: 55...138
(40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
Charge-air pressure-setting point hPa: 300
Del.quantity cm3/: 79,5...81,5
1000H.: (75,5...84,5)
2nd speed 1/min: 1200
Charge press. hPa: 1000
Del.quantity cm3/: 0,0...3,0
1000H.: -
3rd speed 1/min: 1170
Charge press. hPa: 1000
Del.quantity cm3/: 0,0...15,0
1000H.: -
4th speed 1/min: 1140
Charge press. hPa: 1000
Del.quantity cm3/: 15,0...55,0
1000H.: -
5th speed 1/min: 1100
Charge press. hPa: 1000
Del.quantity cm3/: 73,0...79,0
1000H.: (70,0...82,0)

6th speed 1/min: 1050
Charge press. hPa: 1000
Del.quantity cm3/: 83,5...86,5
1000H.: (82,0...88,0)
7th speed 1/min: 900
Charge press. hPa: 1000
Del.quantity cm3/: 86,5...89,5
1000H.: (86,0...92,0)
8th speed 1/min: 750
Charge press. hPa: 1000
Del.quantity cm3/: 94,5...95,5
1000H.: (92,0...98,0)
9th speed 1/min: 700
Charge press. hPa: 300
Del.quantity cm3/: 79,5...80,5
1000H.: (75,5...84,5)
10th speed 1/min: 500
Charge press. hPa: 1000
Del.quantity cm3/: 98,0...106,0
1000H.: -
11th speed 1/min: 500
Charge press. hPa: -
Del.quantity cm3/: 50,5...51,5
1000H.: (46,5...55,5)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1050
Del.quantity cm3/: 0..3
1000H.: -

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 375
Del.quantity cm3/: 8,0...12,0
1000H.: (5,0...15,0)
2nd speed 1/min: 500
Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 250
Del.quantity cm3/: -
ind. 1000H: 45,0
2nd speed 1/min: 450
Del.quantity cm3/: -
max. 1000H : 55,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm	: -
KF	mm	: 5,0...5,4
MS	mm	: 1,2...1,6
SVS max.	mm	: 1,2
XK	mm	: 21,8...23,8
XL	mm	: 14,1...17,5

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 5,9 U34
Edition : 17.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 6/12F1250 R351
Type number : 0 460 426 130
Customer Part-No. : 3 914 928

Customer-specific information
Customer : CDC

Engine : 6 BTA

Power k: 135
Speed 1/mi: 2500

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 027

Opening
pressure bar : 250...253

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : -
(from BDC): -

Start of delivery block
Piston stroke mm: 1,15
mm: +0,02(0,06)

Outlet : D

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 850
Charge press. hPa: 1400
Setting value mm: 2,1...2,5
KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure:

Speed 1/min: 850
Charge press. hPa: 1400
Setting value bar: 6,1...6,7
KSB solenoid-operated
valve volt: 12,0

Full-load del. with charge press.:

Speed 1/min: 1250
Charge press. hPa: 1400
Del.quantity cm³/
1000H.: 79,0...80,0
KSB solenoid-operated
valve volt: 12,0
Dispersion cm³ : 4,0
1000H : (4,5)

Full-load del. w/out charge press.:

Speed 1/min : 500
Del.quantity cm³/
1000H.: 58,5...59,5
KSB solenoid-operated
valve volt: 12,0

Low-idle speed regulation:

Speed 1/min: 375
Charge press. hPa: -
Del.quantity cm³/
1000H.: 4,0...6,0
KSB solenoid-operated
valve volt: 12,0
Dispersion cm³ : 5,5
1000H.: (7,0)

Full-load speed regulation:

Speed 1/min: 1370
Charge press. hPa: 1400
Del.quantity cm³/
1000H: 61,0...67,0
KSB solenoid-operated
valve volt: 12,0

Start:

Speed 1/min: 100
Charge press. hPa: -

Del.quantity : -
mind cm³/1000H.: 70,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 400
Charge press. hPa: -
TD travel mm: 3,0...4,0
mm: -
KSB solenoid-operated
valve volt: -
2nd speed 1/min: 700
Charge press. hPa: 1400
TD travel mm: 0,1...0,9
mm: (0,0...1,2)
KSB solenoid-operated
valve volt: 12,0
3rd speed 1/min: 850
Charge press. hPa: 1400
TD travel mm: 2,1...2,5
mm: (1,6...3,0)
KSB solenoid-operated
valve volt: 12,0
4th speed 1/min: 1000
Charge press. hPa: 1400
TD travel mm: 2,9...3,7
mm: (2,6...4,0)
KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1400
Supply-pump
pressure bar: 4,5...5,1
KSB solenoid-operated
valve volt: 12,0
2nd speed 1/min: 850
Charge press. hPa: 1400
Supply-pump
pressure bar: 6,1...6,7
KSB solenoid-operated
valve volt: 12,0
3rd speed 1/min: 1250
Charge press. hPa: 1400
Supply-pump
pressure bar: 7,7...8,3

Overflow quantity at overflow valve:

1st speed 1/min: 500
Charge press. hPa: -
Overflow : 41...83
quantity cm³/10s: (26...98)
2nd speed 1/min: 1250

Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Overflow : 55...138
quantity cm³/10s: (41...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
Charge-air pressure-setting
point hPa: 745
LDA stroke mm: -
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 76,0...77,0
1000H.: (72,0...81,0)
2nd speed 1/min: 1500
Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 0,0...3,0
1000H.: -
3rd speed 1/min: 1470
Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 0,0...15,0
1000H.: -
4th speed 1/min: 1420
Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 15,0...55,0
1000H.: -
5th speed 1/min: 1370
Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 61,0...67,0
1000H.: (58,0...70,0)
6th speed 1/min: 1250
Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 79,0...80,0
1000H.: (76,5...82,5)
7th speed 1/min: 1100
Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 77,0...83,0
1000H.: (75,5...84,5)
8th speed 1/min: 850
Charge press. hPa: 745
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 79,5...86,5
1000H.: (78,0...88,0)
9th speed 1/min: 700
Charge press. hPa: 745

KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 76,0...77,0
1000H: (72,0...81,0)
10th speed 1/min: 500
Charge press. hPa: 1400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 92,5...106,5
1000H: -
11th speed 1/min: 500
Charge press. hPa: -
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 58,5...59,5
1000H: (54,5...63,5)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1250
Del.quantity cm³/: 0..3
1000H.: -

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del.quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 375
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 4,0...6,0
1000H.: (0,0...10,0)
2nd speed 1/min: 400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 0,0...4,0
1000H.: -
3rd speed 1/min: 325
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 12,5..20,5
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 150
Charge press. hPa: -
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: -
ind. 1000H: 80,0

2nd speed 1/min: 240

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Charge press. hPa: -
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: -
max. 1000H: 60,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : 3,6...3,8
KF mm : -
MS mm : 0,8...1,2
SVS max. mm : 4,4

Remarks:

Operate control lever after each
manifold-pressure compensator pressure
change.

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 5,9 U22
Edition : 12.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 6/12F1050 R159-17
Type number : 0 460 426 133

Customer-specific information
Customer : CDC

Engine : 6 BT

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 016

Opening
pressure bar : 207...210

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,3
(from BDC): $\pm 0,02(0,04)$

Start of delivery block
Piston stroke mm : 1,5
mm : $\pm 0,02(0,06)$

Outlet : 0

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 750
Setting value mm: 2,4...2,8

Supply-pump pressure:

Speed 1/min: 750
Setting value bar: 2,9...3,5

Full-load del. w/out charge press.:

Speed 1/min : 900
Del.quantity cm³/
1000H.: 76,0...77,0
Dispersion cm³/
1000H.: (4,5)

Low-idle speed regulation:

Speed 1/min: 375
Del.quantity cm³/
1000H.: 27,0...33,0
Dispersion cm³/
1000H.: (4,5)

Full-load speed regulation:

Speed 1/min: 1150
Del.quantity cm³/
1000H.: 26,0...34,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm³/1000H.: 110,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600
TD travel mm: 0,9...1,7
mm: (0,6...2,0)
2nd speed 1/min: 750
TD travel mm: 2,4...2,8
mm: (1,9...3,3)
3rd speed 1/min: 900
TD travel mm: 3,5...4,3
mm: (3,2...4,6)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure bar: 1,9...2,5
2nd speed 1/min: 750
Supply-pump
pressure bar: 2,9...3,5
3rd speed 1/min: 900

Supply-pump
pressure bar: 3,5...4,1

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1050
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1200
Del.quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1150
Del.quantity cm3/: 26,0...34,0
1000H.: (24,0...36,0)
3rd speed 1/min: 1050
Del.quantity cm3/: 72,0...75,0
1000H.: (70,5...76,5)
4th speed 1/min: 900
Del.quantity cm3/: 76,0...77,0
1000H.: (73,5...79,5)
5th speed 1/min: 750
Del.quantity cm3/: 78,5...82,5
1000H.: (76,5...84,5)
6th speed 1/min: 500
Del.quantity cm3/: 93,5...97,5
1000H.: (91,0...100,0)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1050
Del.quantity cm3/: 0..3
1000H.: -

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 375
Del.quantity cm3/: 27,0...33,0
1000H.: (25,0...35,0)
2nd speed 1/min: 450
Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 130

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Del.quantity cm3/: -
ind. 1000H: 110,0

2nd speed 1/min: 200
Del.quantity cm3/: -
max. 1000H : 105,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : -
KF mm : 5,0...5,4
MS mm : 1,3...1,7
SVS max. mm : -

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CUM 5,9 U13
Edition : 12.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 6/12F1400 R367
Type number : 0 460 426 137

Customer-specific information
Customer : CDC

Engine : 6 BT

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 027

Opening
pressure bar : 250...253

Perforated-plate
diameter mm : 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : 0,3
(from BDC): +0,02(0,04)

Start of delivery block
Piston stroke mm: 1,5
mm: +0,02(0,06)

Outlet : 0

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 850
Setting value mm: 3,8...4,2

Supply-pump pressure:

Speed 1/min: 1100
Setting value bar: 3,9...4,5

Full-load del. w/out charge press.:

Speed 1/min : 1100
Del.quantity cm³/
1000H.: 56,5...57,5
Dispersion cm³/: 4,0
1000H.: (4,5)

Low-idle speed regulation:

Speed 1/min: 375
Del.quantity cm³/
1000H.: 8,0...14,0
Dispersion cm³/: 5,5
1000H.: (7,0)

Full-load speed regulation:

Speed 1/min: 1450
Del.quantity cm³/
1000H: 37,0...43,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm³/1000H.: 50,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
TD travel mm: 1,5...2,3
mm: (1,2...2,6)
2nd speed 1/min: 850
TD travel mm: 3,8...4,2
mm: (3,3...4,7)
3rd speed 1/min: 1100
TD travel mm: 5,4...6,2
mm: (5,1...6,5)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Supply-pump
pressure bar: 2,5...3,1
2nd speed 1/min: 1100
Supply-pump
pressure bar: 3,9...4,5
3rd speed 1/min: 1400

Supply-pump
pressure bar: 4,9...5,5

Overflow quantity at overflow valve:

1st speed 1/min: 500
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 1400
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1580
Del.quantity cm3/: 0,0...3,0
1000H.: -
2nd speed 1/min: 1530
Del.quantity cm3/: 0,0...15,0
1000H.: -
3rd speed 1/min: 1490
Del.quantity cm3/: 15,0...55,0
1000H.: -
4th speed 1/min: 1450
Del.quantity cm3/: 37,0...43,0
1000H.: (34,0...46,0)
5th speed 1/min: 1400
Del.quantity cm3/: 53,5...56,5
1000H.: (52,0...58,0)
6th speed 1/min: 1100
Del.quantity cm3/: 56,5...57,5
1000H.: (54,0...60,0)
7th speed 1/min: 850
Del.quantity cm3/: 52,5...56,5
1000H.: (50,5...58,5)
8th speed 1/min: 500
Del.quantity cm3/: 39,0...47,0
1000H.: (37,0...49,0)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: 1400
Del.quantity cm3/: 0...3
1000H.: -

Electr. shutoff:

Speed 1/min: 375
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 375
Del.quantity cm3/: 8,0...14,0
1000H.: (6,0...16,0)
2nd speed 1/min: 450

Del.quantity cm3/: 0,0...4,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 130
Del.quantity cm3/: -
ind. 1000H.: 60,0

2nd speed 1/min: 400
Del.quantity cm3/: -
max. 1000H.: 60,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : -
KF mm : 5,0...5,4
MS mm : 1,3...1,7
SVS max. mm : -
XK mm : 18,8...20,8
XL mm : 9,6...13,0

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 1,6 X15
Edition : 11.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 8F2400 R348
Type number : 0 460 484 027

Customer-specific information
Customer : VW

Engine : 086-1.6L

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : -
(from BDC) : -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1250
Setting value mm: 3,1...3,5

Supply-pump pressure:

Speed 1/min: 1250
Setting value bar: 5,0...5,6

Full-load del. w/out charge press.:

Speed 1/min: 1250
Del.quantity cm3/
1000H.: 31,5...32,5
Dispersion cm3/: 2,0
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 425
Del.quantity cm3/
1000H.: 7,0...9,0
Dispersion cm3/: 2,0
1000H.: (3,0)
Residual-Delivery Setting
Speed 1/min: 550
Del.quantity cm3/
1000H.: 2,0...3,0

Full-load speed regulation:

Speed 1/min: 2650
Del.quantity cm3/
1000H.: 12,0...16,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 35,0

Load-dependent start of delivery:

Speed 1/min: 1250

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 750
TD travel mm: 1,1...1,9
mm: (0,8...2,2)
2nd speed 1/min: 1250
TD travel mm: 3,1...3,5
mm: (2,6...4,0)
3rd speed 1/min: 2250
TD travel mm: 7,3...8,1
mm: (7,0...8,4)

Supply-pump pressure characteristic:

1st speed 1/min: 600
Supply-pump
pressure bar: 3,4...4,0
2nd speed 1/min: 1250
Supply-pump
pressure bar: 5,0...5,6
3rd speed 1/min: 2250

Supply-pump
pressure bar: 7,3...7,9

Overflow quantity at overflow valve:

1st speed 1/min: 600
Overflow : 41...83
quantity cm³/10s: (26...98)
2nd speed 1/min: 2250
Overflow : 55...138
quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2800
Del.quantity cm³/: 0,0...6,0
1000H.: -
2nd speed 1/min: 2650
Del.quantity cm³/: 12,0...16,0
1000H.: (10,0...18,0)
3rd speed 1/min: 2550
Del.quantity cm³/: 29,5...29,5
1000H.: (28,5...30,5)
4th speed 1/min: 2250
Del.quantity cm³/: 30,0...32,0
1000H.: (28,8...33,2)
5th speed 1/min: 1250
Del.quantity cm³/: 31,5...32,5
1000H.: (29,8...34,2)
6th speed 1/min: 600
Del.quantity cm³/: 22,5...25,5
1000H.: (21,0...27,0)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 425
ELAB volt: -
Del.quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 425
Del.quantity cm³/: 7,0...9,0
1000H.: (4,0...12,0)
2nd speed 1/min: 400
Del.quantity cm³/: 8,5...11,5
1000H.: (6,0...14,0)

High Idle:

Speed 1/min: 525
Del.quantity cm³/: 7,0...9,0
1000H.: (4,0...12,0)

Residual:

Speed 1/min: 500
Del.quantity : 1,6...3,6
1000H.: (0,0...5,1)

Automatic starting fuel delivery:

1st speed 1/min: 180
Del.quantity cm³/: -
ind. 1000H.: 35,0

2nd speed 1/min: 380
Del.quantity cm³/: -
max. 1000H.: 30,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : 3,2...3,4
KF mm : 5,3...5,7
MS mm : 1,4...1,6

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 1,7 P8
Edition : 11.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F2400 R349
Type number : 0 460 484 028

Customer-specific information
Customer : FIAT

Engine : M 709

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 4,7...5,1
KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure:

Speed 1/min: 1500
Charge press. hPa: 1000

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Setting value bar: 5,7...6,3
KSB solenoid-operated
valve volt: 12,0

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del.quantity cm3/
1000H.: 39,7...40,7

KSB solenoid-operated
valve volt: 12,0
Dispersion cm3/ : 3,0
1000H : -

Full-load del. w/out charge press.:

Speed 1/min : 750
Del.quantity cm3/
1000H.: 26,3...27,3

Low-idle speed regulation:

Speed 1/min: 400
Charge press. hPa: -
Del.quantity cm3/
1000H.: 6,0...10,0

KSB solenoid-operated
valve volt: 12,0

Full-load speed regulation:

Speed 1/min: 2550
Charge press. hPa: 1000
Del.quantity cm3/
1000H: 28,0...34,0

KSB solenoid-operated
valve volt: 12,0

Start:

Speed 1/min: 100
Charge press. hPa: -
Del.quantity : -
mind cm3/1000H.: 33,0

KSB solenoid-operated
valve volt: 12,0

Load-dependent start of delivery:

Speed 1/min: 1500
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 300
 Charge press. hPa: 1000
 TD travel mm: 2,3...4,7
 mm: -
 KSB solenoid-operated
 valve volt: -
 2nd speed 1/min: 750
 Charge press. hPa: 1000
 TD travel mm: 1,5...2,3
 mm: (1,2...2,6)
 KSB solenoid-operated
 valve volt: 12,0
 3rd speed 1/min: 1500
 Charge press. hPa: 1000
 TD travel mm: 4,7...5,1
 mm: (4,2...5,6)
 KSB solenoid-operated
 valve volt: 12,0
 4th speed 1/min: 2000
 Charge press. hPa: 1000
 TD travel mm: 6,9...7,5
 mm: (6,5...7,9)
 KSB solenoid-operated
 valve volt: 12,0
 5th speed 1/min: 2400
 Charge press. hPa: 1000
 TD travel mm: 8,6...9,4
 mm: (8,3...9,7)

Supply-pump pressure characteristic:

1st speed 1/min: 750
 Charge press. hPa: 1000
 Supply-pump
 pressure bar: 3,9...4,5
 KSB solenoid-operated
 valve volt: 12,0
 2nd speed 1/min: 1500
 Charge press. hPa: 1000
 Supply-pump
 pressure bar: 5,7...6,3
 KSB solenoid-operated
 valve volt: 12,0
 3rd speed 1/min: 2000
 Charge press. hPa: 1000
 Supply-pump
 pressure bar: 6,8...7,4
 KSB solenoid-operated
 valve volt: 12,0
 4th speed 1/min: 2400
 Charge press. hPa: 1000
 Supply-pump
 pressure bar: 7,8...8,4
 KSB solenoid-operated
 valve volt: 12,0

Overflow quantity at overflow valve:

1st speed 1/min: 750

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Charge press. hPa: -
 KSB solenoid-operated
 valve volt: 12,0
 Overflow : 41...83
 quantity cm³/10s: (26...98)
 2nd speed 1/min: 2400
 Charge press. hPa: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Overflow : 55...138
 quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 1100
 Charge-air pressure-setting
 point hPa: 400
 LDA stroke mm: 6,0
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 34,5...35,5
 1000H.: (32,0...38,0)
 2nd speed 1/min: 2950
 Charge press. hPa: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 0,0...3,0
 1000H.: -
 3rd speed 1/min: 2750
 Charge press. hPa: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 5,0...13,0
 1000H.: (4,0...14,0)
 4th speed 1/min: 2550
 Charge press. hPa: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 28,0...34,0
 1000H.: (27,0...35,0)
 5th speed 1/min: 2400
 Charge press. hPa: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 38,5...41,5
 1000H.: (37,7...42,3)
 6th speed 1/min: 1500
 Charge press. hPa: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 39,7...40,7
 1000H.: (37,9...42,5)
 7th speed 1/min: 1100
 Charge press. hPa: 400
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 34,5...35,5
 1000H.: (32,0...38,0)
 8th speed 1/min: 1100
 Charge press. hPa: -

KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 26,4...29,4
1000H: (25,6...30,2)

9th speed 1/min: 750

Charge press. hPa: -

KSB solenoid-operated

valve volt: 12,0

Del.quantity cm³/: 1,5...2,3
1000H: (1,2...2,6)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 400

ELAB volt: -

Del.quantity cm³/: 0,0...3,0

max. 1000H.: -

Idle delivery:

1st speed 1/min: 400

KSB solenoid-operated

valve volt: 12,0

Del.quantity cm³/: 6,0...10,0
1000H.: (4,0...12,0)

2nd speed 1/min: 350

KSB solenoid-operated

valve volt: 12,0

Del.quantity cm³/: 14,5...19,5
1000H.: -

3rd speed 1/min: 520

KSB solenoid-operated

valve volt: 12,0

Del.quantity cm³/: 0,0...3,0
1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 350

Charge press. hPa: -

Del.quantity cm³/: -
ind. 1000H: 23,0

2nd speed 1/min: 450

Charge press. hPa: -

Del.quantity cm³/: -
max. 1000H: 40,0

Shutoff electromagnet:

Cut-in

min. voltage : 10,0

Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

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K mm : 3,2...3,4
KF mm : 5,1...5,5
MS mm : 1,3...1,7

Remarks:

Operate control lever after each
manifold-pressure compensator pressure
change.

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN 2,0 P1
Edition : 09.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 8F2300 R317-2
Type number : 0 460 484 030

Customer-specific information
Customer : RNUR

Engine : F8Q-706

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1250
Setting value mm: 3,8...4,2
KSB solenoid-operated
valve volt: -

Supply-pump pressure:

Speed 1/min: 1250
Setting value bar: 4,5...5,1

KSB solenoid-operated
valve volt: -

Full-load del. w/out charge press.:

Speed 1/min : 1250
Del.quantity cm3/
1000H.: 31,5...32,5
KSB solenoid-operated
valve volt: -
Dispersion cm3/: 2,5
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 400
Del.quantity cm3/
1000H.: 4,0...8,0
KSB solenoid-operated
valve volt: -
Dispersion cm3/: 2,5
1000H.: (3,0)
Residual-Delivery Setting
Speed 1/min: 500
Charge press. hPa: -
Del.quantity cm3/
1000H.: 1,0...5,0

Full-load speed regulation:

Speed 1/min: 2450
Del.quantity cm3/
1000H.: 24,0...30,0
KSB solenoid-operated
valve volt: -

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 40,0
KSB solenoid-operated
valve volt: -

Load-dependent start of delivery:

Speed 1/min: 1250

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 310
TD travel mm: 0,3...2,7
mm: -
KSB solenoid-operated
valve volt: 12,0
2nd speed 1/min: 500

TD travel mm: 1,6...4,0
 mm: -
 KSB solenoid-operated
 valve volt: 12,0
 3rd speed 1/min: 750
 TD travel mm: 1,6...2,4
 mm: (1,3...2,7)
 KSB solenoid-operated
 valve volt: -
 4th speed 1/min: 1250
 TD travel mm: 3,8...4,2
 mm: (3,3...4,7)
 KSB solenoid-operated
 valve volt: -
 5th speed 1/min: 2000
 TD travel mm: 6,6...7,4
 mm: (6,3...7,7)
 KSB solenoid-operated
 valve volt: -
 6th speed 1/min: 2250
 TD travel mm: 7,6...8,4
 mm: (7,3...8,7)
 KSB solenoid-operated
 valve volt: -

Supply-pump pressure characteristic:

1st speed 1/min: 750
 Supply-pump
 pressure bar: 3,1...3,7
 KSB solenoid-operated
 valve volt: -
 2nd speed 1/min: 1250
 Supply-pump
 pressure bar: 4,5...5,1
 KSB solenoid-operated
 valve volt: -
 3rd speed 1/min: 2250
 Supply-pump
 pressure bar: 7,0...7,6
 KSB solenoid-operated
 valve volt: -

Overflow quantity at overflow valve:

1st speed 1/min: 750
 KSB solenoid-operated
 valve volt: -
 Overflow : 41...83
 quantity cm³/10s: (26...98)
 2nd speed 1/min: 2250
 KSB solenoid-operated
 valve volt: -
 Overflow : 55...138
 quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2950

KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 0,0...5,0
 1000H.: -
 2nd speed 1/min: 2650
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 8,0...16,0
 1000H.: (7,0...17,0)
 3rd speed 1/min: 2450
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 24,0...30,0
 1000H.: (23,0...31,0)
 4th speed 1/min: 2250
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 31,1...33,1
 1000H.: (29,8...34,4)
 5th speed 1/min: 2000
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 30,5...32,5
 1000H.: (29,2...33,8)
 6th speed 1/min: 1625
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 29,9...32,9
 1000H.: (29,1...33,7)
 7th speed 1/min: 1250
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 31,5...32,5
 1000H.: (29,7...34,3)
 8th speed 1/min: 750
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 30,2...33,2
 1000H.: (29,4...34,0)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 400
 ELAB volt: -
 Del.quantity cm³/: 0,0...3,0
 max. 1000H.: -

Idle delivery:

1st speed 1/min: 400
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 4,0...8,0
 1000H.: (2,0...10,0)

High Idle:

Speed 1/min: 500
Del.quantity cm3/: 7,7...11,7
1000H.: (5,7...13,7)
KSB-Solenoid-operated
valve Volt : -

Automatic starting fuel delivery:

1st speed 1/min: 210
KSB solenoid-operated
valve volt: -
Del.quantity cm3/: -
ind. 1000H: 45,0

2nd speed 1/min: 310
KSB solenoid-operated
valve volt: -
Del.quantity cm3/: -
max. 1000H : 45,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm	: 3,2...3,4
KF	mm	: 5,3...5,7
MS	mm	: 1,1...1,5
SVS max.	mm	: 2,7
XK	mm	: 18,7...20,7
XL	mm	: 11,2...14,6

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWV 2,4 S7
 Edition : 11.05.89
 replaces : -
 Calibrating oil : ISO 4113
 Injection pump : VE 5/ 8F2100 L358
 Type number : 0 460 485 003
 Customer-specific information
 Customer : VW
 Engine : 153-2,4L.

TEST BENCH REQUIREMENTS

Calibrating-oil
 return temp. ,C .
 with thermometer : 40...48
 electronically : 42...50
 Inlet press., bar : 0.35
 Calibrating nozzle-holder
 assembly : 1 688 901 000

Opening
 pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
 x Wall thickness : 2
 x Length mm : 840

Start of delivery
 Prestroke mm : -
 (from BDC): -

Injection-pump setting values
 Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1250
 Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1250
 Setting value bar: 5,7...6,3

Full-load del. w/out charge press.:

Speed 1/min : 1250
 Del.quantity cm3/
 1000H.: 36,0...37,0
 Dispersion cm3/: 2,0
 1000H.: -

Low-idle speed regulation:

Speed 1/min: 415
 Del.quantity cm3/
 1000H.: 7,0...9,0
 Dispersion cm3/: 2,0
 1000H.: -
 Residual-Delivery Setting
 Speed 1/min: 540
 Del.quantity cm3/
 1000H.: 2,0...3,0

Full-load speed regulation:

Speed 1/min: 2400
 Del.quantity cm3/
 1000H: 10,0...14,0

Start:

Speed 1/min: 100
 Del.quantity : -
 mind cm3/1000H.: 35,0

Load-dependent start of delivery:

Speed 1/min: 1250

Inspection-pump test specifications
 Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 750
 TD travel mm: 0,6...1,4
 mm: (0,3...1,7)
 2nd speed 1/min: 1250
 TD travel mm: 2,8...3,2
 mm: (2,3...3,7)
 3rd speed 1/min: 1700
 TD travel mm: 5,1...5,9
 mm: (4,8...6,2)
 4th speed 1/min: 2100
 TD travel mm: 5,3...6,1
 mm: (5,0...6,4)

Supply-pump pressure characteristic:

1st speed 1/min: 600
 Supply-pump
 pressure bar: 4,2...4,8
 2nd speed 1/min: 1250

Supply-pump
pressure bar: 5,7...6,3
3rd speed 1/min: 2100
Supply-pump
pressure bar: 7,7...8,3

Overflow quantity at overflow valve:

1st speed 1/min: 600
Overflow : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2100
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2600
Del.quantity cm3/: 0,0...6,0
1000H.: -
2nd speed 1/min: 2400
Del.quantity cm3/: 10,0...14,0
1000H.: (8,0...16,0)
3rd speed 1/min: 2100
Del.quantity cm3/: 30,5...32,5
1000H.: (29,3...33,7)
4th speed 1/min: 1250
Del.quantity cm3/: 36,0...37,0
1000H.: (34,3...38,7)
5th speed 1/min: 600
Del.quantity cm3/: 31,0...34,0
1000H.: (29,5...35,5)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 415
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 415
Del.quantity cm3/: 7,0...9,0
1000H.: (4,0...12,0)

Residual:

Speed 1/min: 490
Del.quantity : 2,3...4,3
1000H.: (0,8...5,8)

Automatic starting fuel delivery:

1st speed 1/min: 180
Del.quantity cm3/: -
ind. 1000H: 35,0

2nd speed 1/min: 380
Del.quantity cm3/: -
max. 1000H : 37,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
K mm : 3,2...3,4
KF mm : K-OT
MS mm : 1,2...1,6
SVS max. mm : 2,4

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 1,8 A
Compl. date: : 851
Edition : 12.05.89
replaces : 19.12.89
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F2400 R285
Type number : 0 460 494 216

Customer-specific information
Customer : FORD

Engine : 1,8 L.IDI

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Setting value mm: 4,9...5,3
KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure:

Speed 1/min: 1500
Setting value bar: 6,3...6,9

KSB solenoid-operated
valve volt: 12,0

Full-load del. w/out charge press.:

Speed 1/min: 1750
Del.quantity cm3/
1000H.: 29,1...29,5
KSB solenoid-operated
valve volt: 12,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 425
Del.quantity cm3/
1000H.: 10,0...14,0
KSB solenoid-operated
valve volt: 12,0
Dispersion cm3/: 2,5
1000H.: (4,0)

Residual-Delivery Setting
Speed 1/min: 530
Del.quantity cm3/
1000H.: 1,0...5,0
KSB-Solenoid-Operated
valve Volt : 12,0

Full-load speed regulation:

Speed 1/min: 2675
Del.quantity cm3/
1000H.: 8,0...14,0
KSB solenoid-operated
valve volt: 12,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 51,0
KSB solenoid-operated
valve volt: 12,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

Mfg. date: until : 851

1st speed 1/min: 400
TD travel mm: 3,4...3,6 A
mm: (2,7...4,3) A

KSB solenoid-operated
valve volt: -
2nd speed 1/min: 1000
TD travel mm: 2,8...5,2 B
mm: -

KSB solenoid-operated
valve volt: -
3rd speed 1/min: 800
TD travel mm: 0,8...1,6
mm: (0,5...1,9)

KSB solenoid-operated
valve volt: 12,0
4th speed 1/min: 1500
TD travel mm: 4,9...5,3
mm: (4,6...5,6)

KSB solenoid-operated
valve volt: 12,0
5th speed 1/min: 2000
TD travel mm: 7,7...8,5
mm: (7,4...8,8)

KSB solenoid-operated
valve volt: 12,0

Mfg. date: from : 844

1st speed 1/min: 400
TD travel mm: 3,9...4,1 A
mm: (3,0...5,0) A

KSB solenoid-operated
valve volt: -
2nd speed 1/min: 1000
TD travel mm: 3,4...5,8 B
mm: (3,3...5,9) B

KSB solenoid-operated
valve volt: -
3rd speed 1/min: 800
TD travel mm: 1,9...2,7
mm: (1,4...3,2)

KSB solenoid-operated
valve volt: 12,0
4th speed 1/min: 1500
TD travel mm: 6,1...6,5
mm: (5,5...7,1)

KSB solenoid-operated
valve volt: 12,0
5th speed 1/min: 2000
TD travel mm: 8,7...9,5
mm: (8,2...10,0)

KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure characteristic:

Mfg. date: until : 851
1st speed 1/min: 750
Supply-pump
pressure bar: 4,2...4,8
KSB solenoid-operated
valve volt: 12,0
2nd speed 1/min: 1500
Supply-pump
pressure bar: 6,3...6,9
KSB solenoid-operated
valve volt: 12,0
3rd speed 1/min: 2000

Supply-pump
pressure bar: 7,5...8,1
KSB solenoid-operated
valve volt: 12,0

Mfg date: from : 844
1st speed 1/min: 650
Supply-pump
pressure bar: 3,8...4,4
KSB solenoid-operated
valve volt: 12,0
2nd speed 1/min: 1500
Supply-pump
pressure bar: 6,3...6,9
KSB solenoid-operated
valve volt: 12,0
3rd speed 1/min: 2000
Supply-pump
pressure bar: 7,9...8,5
KSB solenoid-operated
valve volt: 12,0

Overflow quantity at overflow valve:

1st speed 1/min: 750
KSB solenoid-operated
valve volt: 12,0
Overflow : 41...83
quantity cm³/10s: (26...98)
2nd speed 1/min: 2400
KSB solenoid-operated
valve volt: 12,0
Overflow : 55...138
quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

Mfg. date: until : 851
1st speed 1/min: 2950
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 0,0...2,0
1000H.: -
2nd speed 1/min: 2675
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 8,0...14,0
1000H.: (6,5...15,5)
3rd speed 1/min: 2550
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 18,0...26,0
1000H.: (16,0...28,0)
4th speed 1/min: 2400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 27,0...29,0
1000H.: (26,0...30,0)
5th speed 1/min: 1750

KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 29,1...29,5
 1000H.: (27,6...31,0)
 6th speed 1/min: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 27,5...30,5
 1000H.: (26,7...31,3)
 7th speed 1/min: 750
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 27,2...30,2
 1000H.: (26,4...31,0)

Mfg. date: from : 844
 1st speed 1/min: 1950
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 0,0...2,0
 1000H.: (0,0...2,0)
 2nd speed 1/min: 2675
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 8,0...14,0
 1000H.: (6,5...15,5)
 3rd speed 1/min: 2550
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 18,0...26,0
 1000H.: (16,0...28,0)
 4th speed 1/min: 2400
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 27,5...29,5
 1000H.: (26,5...30,5)
 5th speed 1/min: 1750
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 30,1...30,5
 1000H.: (28,6...32,0)
 6th speed 1/min: 1000
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 28,5...31,5
 1000H.: (27,7...32,3)
 7th speed 1/min: 650
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 27,5...30,5
 1000H.: (26,7...31,3)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 425
 ELAB volt: -

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Del.quantity cm3/: 0,0...3,0
 max. 1000H.: -

Idle delivery:

Mfg. date: until : 851
 1st speed 1/min: 425
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 10,0...14,0
 1000H.: (6,4...17,6)

Mfg. date: from : 844
 1st speed 1/min: 425
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: 14,0...18,0
 1000H.: (10,4...21,6)

High Idle:

Speed 1/min: 590
 Del.quantity cm3/: 7,0...11,0
 1000H.: (3,4...14,6)
 KSB-Solenoid-operated
 valve Volt: 12,0

Residual:

Speed 1/min: 530
 Del.quantity : 1,0...5,0
 1000H.: (0,2...5,8)
 KSB-Solenoid-operated
 valve Volt: 12,0

Automatic starting fuel delivery:

1st speed 1/min: 275
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: -
 ind. 1000H: 60,0

2nd speed 1/min: 500
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm3/: -
 max. 1000H : 40,0

Shutoff electromagnet:

Cut-in
 min. voltage : 10,0
 Rated voltage : 12,0

Mounting and assembly dimensions:

Designation
 K mm : K1
 KF mm : 5,3...5,7

MS mm : 1,5...1,9
SVS max. mm : 4,6

Remarks:



BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 1,8 C
Edition : 12.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F1800 R298
Type number : 0 460 494 217

Customer-specific information
Customer : FORD

Engine : 1,8 L.IDI

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C :
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC): -

Start of delivery block
Piston stroke mm: 0,80
mm: 0,75...0,85

Outlet : B

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Setting value mm: 4,9...5,3
KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure:

Speed 1/min: 1500
Setting value bar: 6,3...6,9
KSB solenoid-operated
valve volt: 12,0

Full-load del. w/out charge press.:

Speed 1/min : 1000
Del.quantity cm3/
1000H.: 28,8...29,2
KSB solenoid-operated
valve volt: 12,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 425
Del.quantity cm3/
1000H.: 10,0...14,0
KSB solenoid-operated
valve volt: 12,0
Dispersion cm3/: 2,5
1000H.: (4,0)

Residual-Delivery Setting

Speed 1/min: 530
Del.quantity cm3/
1000H.: 1,0...5,0
KSB-Solenoid-Operated
valve Volt : 12,0

Full-load speed regulation:

Speed 1/min: 1850
Del.quantity cm3/
1000H.: 19,5...25,5
KSB solenoid-operated
valve volt: 12,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 51,0
KSB solenoid-operated
valve volt: 12,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 400
TD travel mm: 3,4...3,6 A
mm: (2,7...4,3) A
KSB solenoid-operated
valve volt: -

2nd speed 1/min: 1000
TD travel mm: 2,8...5,2 B
mm: -

KSB solenoid-operated
valve volt: -

3rd speed 1/min: 800
TD travel mm: 0,8...1,6
mm: (0,4...1,9)

KSB solenoid-operated
valve volt: 12,0

4th speed 1/min: 1500
TD travel mm: 4,9...5,3
mm: (4,7...5,6)

KSB solenoid-operated
valve volt: 12,0

5th speed 1/min: 1750
TD travel mm: 6,2...7,0
mm: (5,9...7,3)

KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure bar: 3,8...4,4

KSB solenoid-operated
valve volt: 12,0

2nd speed 1/min: 1500
Supply-pump
pressure bar: 6,3...6,9

KSB solenoid-operated
valve volt: 12,0

3rd speed 1/min: 1750
Supply-pump
pressure bar: 6,9...7,5

KSB solenoid-operated
valve volt: 12,0

Overflow quantity at overflow valve:

1st speed 1/min: 750
KSB solenoid-operated
valve volt: 12,0
Overflow : 41...83
quantity cm³/10s: (26...98)

2nd speed 1/min: 1750
KSB solenoid-operated
valve volt: 12,0
Overflow : 55...138
quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2050
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 0,0...2,0
1000H.: -

2nd speed 1/min: 1910

KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 1,0...9,0
1000H.: (0,0...11,0)

3rd speed 1/min: 1850
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 19,5...25,5
1000H.: (18,0...27,0)

4th speed 1/min: 1750
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 28,3...30,3
1000H.: (27,3...31,3)

5th speed 1/min: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 28,8...29,2
1000H.: (27,3...30,7)

6th speed 1/min: 750
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 27,2...30,2
1000H.: (26,4...31,0)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 425
ELAB volt: -
Del.quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 425
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 10,0...14,0
1000H.: (6,4...17,6)

High Idle:

Speed 1/min: 590
Del.quantity cm³/: 7,0...11,0
1000H.: (3,4...14,6)
KSB-Solenoid-operated
valve Volt: 12,0

Residual:

Speed 1/min: 530
Del.quantity : 1,0...5,0
1000H.: (0,2...5,8)
KSB-Solenoid-operated
valve Volt: 12,0

Automatic starting fuel delivery:

1st speed 1/min: 275
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: -
ind. 1000H: 60,0

2nd speed 1/min: 500
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: -
max. 1000H : 40,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm	: K1
KF	mm	: 5,3...5,7
MS	mm	: 1,5...1,9
SVS max.	mm	: 4,6

Remarks:

Pump/engine assignment:

Stroke in blocking position 0.75...
0.85 mm referenced to outlet "B", with-
out timing-device cover KDEP 1151.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 1,8 B
Compl. date: : 851
Edition : 12.05.89
replaces : 19.12.88
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F2400 R299
Type number : 0 460 494 218

Customer-specific information
Customer : FORD

Engine : 1,8 L.IDI

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC): -

Start of delivery block
Piston stroke mm: 0,80
mm: 0,75...0,85
Outlet : B

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Setting value mm: 4,9...5,3
KSB solenoid-operated
valve volt: 12,0

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Supply-pump pressure:

Speed 1/min: 1500
Setting value bar: 6,3...6,9
KSB solenoid-operated
valve volt: 12,0

Full-load del. w/out charge press.:

Speed 1/min : 1750
Del.quantity cm3/
1000H.: 28,1...28,5
KSB solenoid-operated
valve volt: 12,0
Dispersion cm3/: 2,0
1000H.: (3,0)

Low-idle speed regulation:

Speed 1/min: 425
Del.quantity cm3/
1000H.: 10,0...14,0
KSB solenoid-operated
valve volt: 12,0
Dispersion cm3/: 2,5
1000H.: (4,0)

Residual-Delivery Setting

Speed 1/min: 530
Del.quantity cm3/
1000H.: 1,0...5,0

KSB-Solenoid-Operated
valve Volt : 12,0

Full-load speed regulation:

Speed 1/min: 2675
Del.quantity cm3/
1000H.: 8,0...14,0
KSB solenoid-operated
valve volt: 12,0

Start:

Speed 1/min: 100
Del.quantity : -
mind cm3/1000H.: 51,0
KSB solenoid-operated
valve volt: 12,0

Load-dependent start of delivery:

Speed 1/min: 1200

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 400
TD travel mm: 3,4...3,6 A
mm: (2,7...4,3) A

KSB solenoid-operated
valve volt: -
2nd speed 1/min: 1000
TD travel mm: 2,8...5,2 B
mm: -

KSB solenoid-operated
valve volt: -
3rd speed 1/min: 800
TD travel mm: 0,8...1,6
mm: (0,5...1,9)

KSB solenoid-operated
valve volt: 12,0
4th speed 1/min: 1500
TD travel mm: 4,9...5,3
mm: (4,6...5,6)

KSB solenoid-operated
valve volt: 12,0
5th speed 1/min: 2000
TD travel mm: 7,7...8,5
mm: (7,4...8,8)

KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure characteristic:

1st speed 1/min: 750
Supply-pump
pressure bar: 4,2...4,8

KSB solenoid-operated
valve volt: 12,0

2nd speed 1/min: 1500
Supply-pump
pressure bar: 6,3...6,9

KSB solenoid-operated
valve volt: 12,0

3rd speed 1/min: 2000
Supply-pump
pressure bar: 7,5...8,1

KSB solenoid-operated
valve volt: 12,0

Overflow quantity at overflow valve:

1st speed 1/min: 750
KSB solenoid-operated
valve volt: 12,0
Overflow : 41...83
quantity cm3/10s: (26...98)

2nd speed 1/min: 2400
KSB solenoid-operated
valve volt: 12,0
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 2950

KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 0,0...2,0
1000H.: -

2nd speed 1/min: 2675
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 8,0...14,0
1000H.: (6,5...15,5)

3rd speed 1/min: 2550
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 18,0...26,0
1000H.: (16,0...28,0)

4th speed 1/min: 2400
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 27,0...29,0
1000H.: (26,0...30,0)

5th speed 1/min: 1750
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 28,1...28,5
1000H.: (26,6...30,0)

6th speed 1/min: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 26,5...29,5
1000H.: (25,7...30,3)

7th speed 1/min: 750
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 26,5...29,5
1000H.: (25,7...30,3)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 425
ELAB volt: -
Del.quantity cm3/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 425
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm3/: 10,0...14,0
1000H.: (6,4...17,6)

High Idle:

Speed 1/min: 590
Del.quantity cm3/: 7,0...11,0
1000H.: (3,4...14,6)
KSB-Solenod-operated
alve Volt: 12,0

Residual:

Speed 1/min: 530
Del.quantity : 1,0...5,0
1000H.: (0,2...5,8)
KSB-Solenoid-operated
valve Volt: 12,0

Arrangement of drivers on engine-
speed lever for exhaust-gas-
recirculation valve linkage (guage)

1st speed 1/min: 1200
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 11,3...12,3
1000H.: (9,3...14,3)

Automatic starting fuel delivery:

1st speed 1/min: 275
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: -
ind. 1000H: 60,0

2nd speed 1/min: 500
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: -
max. 1000H : 40,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm : K1
KF mm : 5,3...5,7
MS mm : 1,5...1,9
SVS max. mm : 4,6

Remarks:

Pump/engine assignment:
Stroke in blocking position 0.75...
0.85 mm referenced to outlet "B", with-
out timing-device cover KDEP 1151.

Test angular position:
Setting = 12.0 mm

Adjust lever of spring-type load-
impact damping:
Distance between ball stud and fastening screw

	Dimension yb
22.4...23.4 mm	30.0...39.7 mm
20.2...21.2 mm	39.8...41.5 mm
18.0...19.0 mm	41.6...43.3 mm
15.8...16.8 mm	43.4...45.1 mm
13.6...14.6 mm	45.2...47.0 mm

For adjustment of switching point
(EGR valve), include 12.0 mm spacer
at third fuel-delivery stop.

A = KSB adjustment point
B = KSB curve point

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN 2,0 P2
Edition : 10.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F2200 R345
Type number : 0 460 494 248

Customer-specific information
Customer : J8S

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1400
Charge press. hPa: 800
Setting value mm: 4,0...4,44
KSB solenoid-operated
valve volt: -

Supply-pump pressure:

Speed 1/min: 1400
Charge press. hPa: 800
Setting value bar: 5,1...5,7

KSB solenoid-operated
valve volt: -

Full-load del. with charge press.:

Speed 1/min: 1400
Charge press. hPa: 800
Del.quantity cm³/
1000H.: 47,0...48,0

KSB solenoid-operated
valve volt: -
Dispersion cm³/ : 2,5
1000H : (3,0)

Full-load del. w/out charge press.:

Speed 1/min : 600
Del.quantity cm³/
1000H.: 37,0...38,0

KSB solenoid-operated
valve volt: -

Low-idle speed regulation:

Speed 1/min: 425
Charge press. hPa: -
Del.quantity cm³/
1000H.: 5,0...9,0

KSB solenoid-operated
valve volt: -
Dispersion cm³/ : 2,5
1000H.: (3,0)

Residual-Delivery Setting
Speed 1/min: 500
Charge press. hPa: -
Del.quantity cm³/
1000H.: 5,5...9,5

KSB-Solenoid-Operated
valve Volt : -

Full-load speed regulation:

Speed 1/min: 2400
Charge press. hPa: 800
Del.quantity cm³/
1000H: 23,0...29,0

KSB solenoid-operated
valve volt: -

Start:

Speed 1/min: 100
Charge press. hPa: -
Del.quantity : -
mind cm³/1000H.: 60,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 400
 Charge press. hPa: 800
 TD travel mm: 1,2...3,6
 mm: -
 KSB solenoid-operated
 valve volt: 12,0
 2nd speed 1/min: 1000
 Charge press. hPa: 800
 TD travel mm: 1,9...2,7
 mm: (1,6...3,0)
 KSB solenoid-operated
 valve volt: -
 3rd speed 1/min: 1400
 Charge press. hPa: 800
 TD travel mm: 4,0...4,4
 mm: (3,5...4,9)
 KSB solenoid-operated
 valve volt: -
 4th speed 1/min: 1800
 Charge press. hPa: 800
 TD travel mm: 5,7...6,5
 mm: (5,4...6,8)
 KSB solenoid-operated
 valve volt: -
 5th speed 1/min: 2000
 Charge press. hPa: 800
 TD travel mm: 6,2...7,0
 mm: (5,9...7,3)

Supply-pump pressure characteristic:

1st speed 1/min: 600
 Charge press. hPa: 800
 Supply-pump
 pressure bar: 2,6...3,2
 KSB solenoid-operated
 valve volt: -
 2nd speed 1/min: 1400
 Charge press. hPa: 800
 Supply-pump
 pressure bar: 5,1...5,7
 KSB solenoid-operated
 valve volt: -
 3rd speed 1/min: 2000
 Charge press. hPa: 800
 Supply-pump
 pressure bar: 6,9...7,5
 KSB solenoid-operated
 valve volt: -

Overflow quantity at overflow valve:

1st speed 1/min: 600
 Charge press. hPa: -
 KSB solenoid-operated
 valve volt: -
 Overflow : 41...83
 quantity cm³/10s: (26...98)

2nd speed 1/min: 2000
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Overflow : 55...138
 quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
 Charge-air pressure-setting
 point hPa: 200
 LDA stroke mm: 5,5
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 41,0...42,0
 1000H.: (38,5...44,5)
 2nd speed 1/min: 2700
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 0,0...3,0
 1000H.: -
 3rd speed 1/min: 2500
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 2,5...17,5
 1000H.: -
 4th speed 1/min: 2400
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 23,0...29,0
 1000H.: (22,0...30,0)
 5th speed 1/min: 2000
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 43,9...45,9
 1000H.: (42,1...46,7)
 6th speed 1/min: 1400
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 47,0...48,0
 1000H.: (45,2...49,8)
 7th speed 1/min: 1000
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 45,4...48,4
 1000H.: (43,4...49,4)
 8th speed 1/min: 700
 Charge press. hPa: 200
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 41,0...42,0
 1000H.: (38,5...44,5)
 9th speed 1/min: 600

Charge press. hPa: -
Del.quantity cm³/: 37,0...38,0
1000H: (34,5...40,5)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 425
ELAB volt: -
Del.quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 425
KSB solenoid-operated
valve volt: -
Del.quantity cm³/: 5,0...9,0
1000H.: (3,0...11,0)

High Idle:

Speed 1/min: 500
Del.quantity cm³/: 5,5...9,5
1000H.: (3,5...11,5)
KSB-Solenoid-operated
valve Volt: -

Residual:

Speed 1/min: 500
Del.quantity : 1,0...5,0
1000H.: -
KSB-Solenoid-operated
valve Volt: -

Automatic starting fuel delivery:

1st speed 1/min: 180
KSB solenoid-operated
valve volt: -
Del.quantity cm³/: -
ind. 1000H: 40,0

2nd speed 1/min: 300
KSB solenoid-operated
valve volt: -
Del.quantity cm³/: -
max. 1000H : 40,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm	: 3,2...3,4
KF	mm	: 5,6...6,0
MS	mm	: 1,3...1,7
SVS max.	mm	: 3,6

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : REN 2,0 P3
Edition : 10.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F2200 R345-1
Type number : 0 460 494 249

Customer-specific information
Customer : J8S

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC) : -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1400
Charge press. hPa: 800
Setting value mm: 4,0...4,44
KSB solenoid-operated
valve volt: -

Supply-pump pressure:

Speed 1/min: 1400
Charge press. hPa: 800
Setting value bar: 5,1...5,7

KSB solenoid-operated
valve volt: -

Full-load del. with charge press.:

Speed 1/min: 1400
Charge press. hPa: 800
Del.quantity cm3/
1000H.: 47,0...48,0
KSB solenoid-operated
valve volt: -
Dispersion cm3/ : 2,5
1000H : (3,0)

Full-load del. w/out charge press.:

Speed 1/min : 600
Del.quantity cm3/
1000H.: 37,0...38,0
KSB solenoid-operated
valve volt: -

Low-idle speed regulation:

Speed 1/min: 425
Charge press. hPa: -
Del.quantity cm3/
1000H.: 5,0...9,0
KSB solenoid-operated
valve volt: -
Dispersion cm3/ : 2,5
1000H.: (3,0)

Residual-Delivery Setting
Speed 1/min: 500
Charge press. hPa: -
Del.quantity cm3/
1000H.: 5,5...9,5
KSB-Solenoid-Operated
valve Volt : -

Full-load speed regulation:

Speed 1/min: 2400
Charge press. hPa: 800
Del.quantity cm3/
1000H: 23,0...29,0
KSB solenoid-operated
valve volt: -

Start:

Speed 1/min: 100
Charge press. hPa: -
Del.quantity : -
mind cm3/1000H.: 60,0

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 400
 Charge press. hPa: 800
 TD travel mm: 1,2...3,6
 mm: -
 KSB solenoid-operated
 valve volt: 12,0
 2nd speed 1/min: 1000
 Charge press. hPa: 800
 TD travel mm: 1,9...2,7
 mm: (1,6...3,0)
 KSB solenoid-operated
 valve volt: -
 3rd speed 1/min: 1400
 Charge press. hPa: 800
 TD travel mm: 4,0...4,4
 mm: (3,5...4,9)
 KSB solenoid-operated
 valve volt: -
 4th speed 1/min: 1800
 Charge press. hPa: 800
 TD travel mm: 5,7...6,5
 mm: (5,4...6,8)
 KSB solenoid-operated
 valve volt: -
 5th speed 1/min: 2000
 Charge press. hPa: 800
 TD travel mm: 6,2...7,0
 mm: (5,9...7,3)

Supply-pump pressure characteristic:

1st speed 1/min: 600
 Charge press. hPa: 800
 Supply-pump
 pressure bar: 2,6...3,2
 KSB solenoid-operated
 valve volt: -
 2nd speed 1/min: 1400
 Charge press. hPa: 800
 Supply-pump
 pressure bar: 5,1...5,7
 KSB solenoid-operated
 valve volt: -
 3rd speed 1/min: 2000
 Charge press. hPa: 800
 Supply-pump
 pressure bar: 6,9...7,5
 KSB solenoid-operated
 valve volt: -

Overflow quantity at overflow valve:

1st speed 1/min: 600
 Charge press. hPa: -
 KSB solenoid-operated
 valve volt: -
 Overflow : 41...83
 quantity cm³/10s: (26...98)

2nd speed 1/min: 2000
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Overflow : 55...138
 quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 700
 Charge-air pressure-setting
 point hPa: 200
 LDA stroke mm: 5,5
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 41,0...42,0
 1000H.: (38,5...44,5)
 2nd speed 1/min: 2700
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 0,0...3,0
 1000H.: -
 3rd speed 1/min: 2500
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 2,5...17,5
 1000H.: -
 4th speed 1/min: 2400
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 23,0...29,0
 1000H.: (22,0...30,0)
 5th speed 1/min: 2000
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 43,9...45,9
 1000H.: (42,1...46,7)
 6th speed 1/min: 1400
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 47,0...48,0
 1000H.: (45,2...49,8)
 7th speed 1/min: 1000
 Charge press. hPa: 800
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 45,4...48,4
 1000H.: (43,4...49,4)
 8th speed 1/min: 700
 Charge press. hPa: 200
 KSB solenoid-operated
 valve volt: -
 Del.quantity cm³/: 41,0...42,0
 1000H.: (38,5...44,5)
 9th speed 1/min: 600

Charge press. hPa: -
Del.quantity cm³/: 37,0...38,0
1000H: (34,5...40,5)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 425
ELAB volt: -
Del.quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 425
KSB solenoid-operated
valve volt: -
Del.quantity cm³/: 5,0...9,0
1000H.: (3,0...11,0)

High Idle:

Speed 1/min: 500
Del.quantity cm³/: 5,5...9,5
1000H.: (3,5...11,5)
KSB-Solenoid-operated
valve Volt: -

Residual:

Speed 1/min: 500
Del.quantity : 1,0...5,0
1000H.: -
KSB-Solenoid-operated
valve Volt: -

Automatic starting fuel delivery:

1st speed 1/min: 180
KSB solenoid-operated
valve volt: -
Del.quantity cm³/: -
ind. 1000H: 40,0

2nd speed 1/min: 300
KSB solenoid-operated
valve volt: -
Del.quantity cm³/: -
max. 1000H : 40,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm : 3,2...3,4
KF mm : 5,6...6,0
MS mm : 1,3...1,7
SVS max. mm : 3,6

Remarks:

Operate control lever after each
manifold-pressure compensator pressure
change.

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FIA 1,7 P6
Edition : 11.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F2100 R303-1
Type number : 0 460 494 250

Customer-specific information
Customer : FIAT

Engine : M710-CT

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : -
(from BDC) : -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 6,0...6,4
KSB solenoid-operated
valve volt: 12,0

Supply-pump pressure:

Speed 1/min: 1500
Charge press. hPa: 1000

Setting value bar: 5,6...6,2
KSB solenoid-operated
valve volt: 12,0

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del.quantity cm³/
1000H.: 53,0...54,0
KSB solenoid-operated
valve volt: 12,0
Dispersion cm³ : 2,5
1000H.: -

Full-load del. w/out charge press.:

Speed 1/min: 600
Del.quantity cm³/
1000H.: 41,0...42,0
KSB solenoid-operated
valve volt: 12,0

Low-idle speed regulation:

Speed 1/min: 400
Charge press. hPa: -
Del.quantity cm³/
1000H.: 11,0...15,0

KSB solenoid-operated
valve volt: 12,0
Residual-Delivery Setting
Speed 1/min: 700
Charge press. hPa: -
Del.quantity cm³/
1000H.: 4,0...6,0

KSB-Solenoid-Operated
valve Volt : 12,0

Full-load speed regulation:

Speed 1/min: 2300
Charge press. hPa: 1000
Del.quantity cm³/
1000H.: 32,0...38,0

KSB solenoid-operated
valve volt: 12,0

Start:

Speed 1/min: 100
Charge press. hPa: -
Del.quantity : -
mind cm³/1000H.: 55,0

Load-dependent start of delivery:

Speed 1/min: 1500

Inspection-pump test specifications

Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000
TD travel mm: 3,9...5,5
mm: (3,2...6,2)

KSB solenoid-operated
valve volt: -
2nd speed 1/min: 1000
Charge press. hPa: 1000
TD travel mm: 3,5...6,5
mm: -

KSB solenoid-operated
valve volt: -
3rd speed 1/min: 800
Charge press. hPa: 1000
TD travel mm: 1,9...2,7
mm: (1,6...3,0)

KSB solenoid-operated
valve volt: 12,0
4th speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: 6,0...6,4
mm: (5,7...6,7)

KSB solenoid-operated
valve volt: 12,0
5th speed 1/min: 2100
Charge press. hPa: 1000
TD travel mm: 8,6...9,4
mm: (8,3...9,7)

Supply-pump pressure characteristic:

1st speed 1/min: 800
Charge press. hPa: 1000
Supply-pump
pressure bar: 3,6...4,2

KSB solenoid-operated
valve volt: 12,0
2nd speed 1/min: 1500
Charge press. hPa: 1000

Supply-pump
pressure bar: 5,6...6,2

KSB solenoid-operated
valve volt: 12,0
3rd speed 1/min: 2100
Charge press. hPa: 1000

Supply-pump
pressure bar: 7,2...7,8

KSB solenoid-operated
valve volt: 12,0

Overflow quantity at overflow valve:

1st speed 1/min: 800
Charge press. hPa: 1000

KSB solenoid-operated
valve volt: 12,0
Overflow : 41...83
quantity cm³/10s: (26...98)
2nd speed 1/min: 2100
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0
Overflow : 55...138
quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 800
Charge-air pressure-setting
point hPa: 400
LDA stroke mm: 6,2
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 51,0...52,0
1000H.: (49,0...53,0)

2nd speed 1/min: 2650
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 0,0...7,0
1000H.: -

3rd speed 1/min: 2450
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 12,0...20,0
1000H.: (11,0...21,0)

4th speed 1/min: 2300
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 32,0...38,0
1000H.: (31,0...39,0)

5th speed 1/min: 2100
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 49,5...52,5
1000H.: (48,5...53,5)

6th speed 1/min: 1500
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 53,0...54,0
1000H.: (51,5...55,5)

7th speed 1/min: 800
Charge press. hPa: 1000
KSB solenoid-operated
valve volt: 12,0
Del.quantity cm³/: 56,0...59,0
1000H.: -

8th speed 1/min: 800
Charge press. hPa: -

KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 40,0...42,0
 1000H: (38,5...43,5)
 9th speed 1/min: 800
 Charge press. hPa: 400
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 51,0...52,0
 1000H: (49,0...54,0)
 10th speed 1/min: 600
 Charge press. hPa: -
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 41,0...42,0
 1000H: (39,0...44,0)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 400
 ELAB volt: -
 Del.quantity cm³/: 0,0...3,0
 max. 1000H.: -

Idle delivery:

1st speed 1/min: 400
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 11,0...15,
 1000H.: (9,5...16,5)
 2nd speed 1/min: 700
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 4,0...6,0
 1000H.: (3,0...7,0)
 3rd speed 1/min: 500
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: 6,5...9,5
 1000H.: -

Automatic starting fuel delivery:

1st speed 1/min: 220
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: -
 ind. 1000H: 57,0

2nd speed 1/min: 300
 KSB solenoid-operated
 valve volt: 12,0
 Del.quantity cm³/: -
 max. 1000H: 47,5

Shutoff electromagnet:

Cut-in
 min. voltage : 10,0
 Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm	: 3,2...3,4
KF	mm	: 5,6...6,0
MS	mm	: 1,0...1,4
SVS max.	mm	: -
XK	mm	: 18,8...20,8
XL	mm	: 10,0...13,4

Operate control lever after each
 manifold-pressure compensator pressure
 change.

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWW 1,6 X13
Edition : 10.05.89
replaces : -
Calibrating oil : ISO 4113

Injection pump : VE 4/ 9F2250 R328-2
Type number : 0 460 494 252

Customer-specific information
Customer : VW

Engine : 086 T-1,6L LLK

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.35

Calibrating nozzle-holder
assembly : 1 688 901 000

Opening
pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6
x Wall thickness : 2
x Length mm : 840

Start of delivery
Prestroke mm : -
(from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1250
Charge press. hPa: 750
Setting value mm: 3,0...3,4

Supply-pump pressure:

Speed 1/min: 1250
Charge press. hPa: 750
Setting value bar: 4,9...5,5

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 750
Del.quantity cm3/
1000H.: 42,0...43,0
Dispersion cm3/ : 2,5
1000H : (3,0)

Full-load del. w/out charge press.:

Speed 1/min : 700
Del.quantity cm3/
1000H.: 26,5...27,5

Low-idle speed regulation:

Speed 1/min: 425
Charge press. hPa: -
Del.quantity cm3/
1000H.: 9,0...11,0
Dispersion cm3/ : 2,5
1000H.: (3,0)

Residual-Delivery Setting

Speed 1/min: 550
Charge press. hPa: -
Del.quantity cm3/
1000H.: 2,0...3,0

Full-load speed regulation:

Speed 1/min: 2525
Charge press. hPa: 750
Del.quantity cm3/
1000H: 13,0...17,0

Start:

Speed 1/min: 100
Charge press. hPa: -
Del.quantity : -
mind cm3/1000H.: 35,0

Load-dependent start of delivery:

Speed 1/min: 1250
Charge press. hPa: -

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000
Charge press. hPa: 750
TD travel mm: 1,7...2,5
mm: (1,4...2,8)
2nd speed 1/min: 1250
Charge press. hPa: 750

TD travel mm: 3,0...3,4
mm: (2,5...3,9)
3rd speed 1/min: 1800
Charge press. hPa: 750
TD travel mm: 5,6...6,4
mm: (5,3...6,7)
4th speed 1/min: 2250
Charge press. hPa: 750
TD travel mm: 7,0...7,8
mm: (6,7...8,1)

Supply-pump pressure characteristic:

1st speed 1/min: 700
Charge press. hPa: 750
Supply-pump pressure bar: 3,3...3,9
2nd speed 1/min: 1250
Charge press. hPa: 750
Supply-pump pressure bar: 4,9...5,5
3rd speed 1/min: 2250
Charge press. hPa: 750
Supply-pump pressure bar: 7,7...8,3

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: -
Overflow : 41...83
quantity cm³/10s: (26...98)
2nd speed 1/min: 2250
Charge press. hPa: 750
Overflow : 55...138
quantity cm³/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 900
Charge-air pressure-setting point hPa: 300
LDA stroke mm: 5,5
Del.quantity cm³/: 33,0...34,0
1000H.: (30,5...36,5)
2nd speed 1/min: 2650
Charge press. hPa: 750
Del.quantity cm³/: 0,0...6,0
1000H.: -
3rd speed 1/min: 2525
Charge press. hPa: 750
Del.quantity cm³/: 13,0...17,0
1000H.: (11,0...19,0)
4th speed 1/min: 2425
Charge press. hPa: 750
Del.quantity cm³/: 26,5...36,5
1000H.: (25,5...37,5)
5th speed 1/min: 2250
Charge press. hPa: 750

Del.quantity cm³/: 36,3...38,3
1000H.: (35,1...39,5)
6th speed 1/min: 1500
Charge press. hPa: 750
Del.quantity cm³/: 42,0...43,0
1000H.: (40,3...44,7)
7th speed 1/min: 900
Charge press. hPa: 300
Del.quantity cm³/: 33,0...34,0
1000H.: (30,5...36,5)
8th speed 1/min: 700
Charge press. hPa: -
Del.quantity cm³/: 26,5...27,5
1000H.: (24,0...30,0)
9th speed 1/min: 700
Charge press. hPa: 750
Del.quantity cm³/: 34,0...37,0
1000H.: (32,5...38,5)
10th speed 1/min: 600
Charge press. hPa: -
Del.quantity cm³/: 25,0...30,0
1000H.: (22,5...32,5)

Zero delivery (stop):

Electr. shutoff:

Speed 1/min: 425
ELAB volt: -
Del.quantity cm³/: 0,0...3,0
max. 1000H.: -

Idle delivery:

1st speed 1/min: 425
Del.quantity cm³/: 9,0...11,0
1000H.: (4,5...15,5)

High Idle:

Speed 1/min: 525
Del.quantity cm³/: 9,0...11,0
1000H.: (5,0...15,0)

Residual:

Speed 1/min: 500
Del.quantity : 2,5...4,5
1000H.: (0,0...7,0)

Automatic starting fuel delivery:

1st speed 1/min: 150
Del.quantity cm³/: -
ind. 1000H: 35,0
2nd speed 1/min: 350
Del.quantity cm³/: -
max. 1000H : 37,0

Shutoff electromagnet:

Cut-in

min. voltage : 10,0

Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm : K1

KF mm : 5,6...6,0

MS mm : 1,1...1,5

SVS max. mm : -

Remarks:

Correction at adjusting nut (46)

Operate control lever after each
manifold-pressure compensator pressure
change.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 2,0 r6
Edition : 03.07.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 074 897
Injection pump
Pump designation : PES4M55C320RS172
EP type number : 0 410 054 958
Governor
Governor design. : RSF360/2300M60-25
Governor no. : 0 420 021 132

Customer-spec. information
Customer : DB-PKW

Engine : OM601-Abgl. MJ90

1st version kW : 53.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
: (1.65...1.85)

Rack travel in mm : 20.00...22.00
Firing order : 1- 3- 4- 2

B18

Phasing : 0-90-180-270

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 3.0...3.1

100 s: (2.9...3.2)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 335.0

Rack travel in mm : 6.5...6.7

Del.quantity cm3/ : 0.5...0.6

100 s: (0.4...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1100

Del.quantity : 30.5...31.5

1000 : (29.5...32.5)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8,0...8,4

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1,4...1,5

LOW IDLE 1

Control lever

position degrees: 12...16

Setting point w/out bumper spring

Spread cm³ : 2.50
 1000 s: (3.00)

STARTING FUEL DELIVERY

```
Speed          rpm      : 100
Del.quantity   cm3/     : 52.0...0.0
                1000 s : (52.0...0.0)
Rack travel in mm : 20.10...0.00
```

HIGH IDLE

```

1st version
Aneroid pressure h: 1100
Speed          rpm : 2500
Rack travel in mm : 8.00...8.40
Del.quantity cm3/ : 16.0...20.0
                1000 s: (15.0...21.0)
Spread         cm3 : 2.50
                1000 s: (3.00)

```

LOW IDLE

```
Speed      rpm      : 335
Rack travel in mm : 6.50...6.70
Del.quantity cm3/  : 5.0...6.0
            1000 s : (4.5...9.0)
Spread     cm3      : 1.00
            1000 s : (1.50)
```

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

```
Control Lever at idle stop
Speed          rpm      : 360
Rack travel in mm : (13,0...14,4)
Del.quantity   cm3/     -
                1000 s : (29,0...37,0)
```

Current A : 1,8
Control lever at full-load stop
Speed rpm : 2950
Rack travel in mm : 0,0...1,0
Current

short-duration A : 3,0

Starting test
Speed rpm : 100
Del.quantity cm3/ : -
min. 1000 s: 52,0

Remarks:

Pin projection = 16.60...16.70 mm

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49, max.
0.2 mm control-rod travel deduction

allowable after switchover point (of starting cam) up to 1000 1/min.
Control-lever position 46.5, , .
control-rod travel deduction must be greater than 0.2 mm after switchover point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.

With $n = 335$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

Difference in start of delivery between
max. and min. value = max. 1, angular
displacement of cam

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 17.3, ...17.7, .
(17.2...17.8,) angular displacement of
cam following start of delivery of
cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 2,0 r7
Edition : 03.07.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 074 898
Injection pump
Pump designation : PES4M55C320RS172
EP type number : 0 410 054 958
Governor
Governor design. : RSF375/2300M56-10
Governor no. : 0 420 021 130

Customer-spec. information
Customer : DB-PKW

Engine : OM601-Abgl. MJ90

1st version kW : 53.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
: (1.65...1.85)
Rack travel in mm : 20.00...22.00
Firing order : 1- 3- 4- 2

B21

Phasing : 0-90-180-270

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 3.0...3.1

100 s: (2.9...3.2)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 375.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 0.5...0.6

100 s: (0.4...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1100

Del.quantity : 30.5...31.5

1000 : (29.5...32.5)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8,0...8,4

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1,4...1,5

LOW IDLE 1

Control lever

position degrees: 12...16

Setting point w/out bumper spring

Speed rpm : 375
Rack travel in mm : 6.5

Testing:

Speed rpm : 250
Minimum rack travel: 11.00
Speed rpm : 375
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.50
Speed rpm : 650...750
Speed rpm : 1000
Maximum rack travel: 1.50

SET IDLE AUXILIARY SPRING

Speed rpm : 400
Rack travel in mm : 5,5...5,7
 : (5,4...5,8)

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in m: 12.10...12.20
2nd speed rpm : 1800
Rack travel in m: 11.50...11.70
3rd speed rpm : 2200
Rack travel in m: 10.90...11.10

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 1000
Pressure hPa : 950
Rack travel mm : 0.00...0.20

Measurement

Speed 1/min : 1000

1st pressure hPa : 900
Rack travel in m: 0.50...0.70
2nd pressure hPa : 750
Rack travel in m: 1.80...2.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1100
Speed rpm : 1800
Del.quantity cm3/ : 33.5...35.0
 1000 s: (32.5...36.0)
Spread cm3 : 2.50
 1000 s: (3.)
Aneroid pressure h: 1100
Speed rpm : 2200
Del.quantity cm3/ : 31.0...33.0
 1000 s: (30.0...34.0)

Spread cm3 : 2.50
 1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 52.0...0.0
 1000 s: (52.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version

Aneroid pressure h: 1100
Speed rpm : 2500
Rack travel in mm : 8.00...8.40
Del.quantity cm3/ : 16.0...20.0
 1000 s: (15.0...21.0)
Spread cm3 : 2.50
 1000 s: (3.00)

LOW IDLE

Speed rpm : 375
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 5.0...6.0
 1000 s: (4.5...9.0)
Spread cm3 : 1.00
 1000 s: (1.50)

SETTING PNEUMATIC FAST IDLE (ELA)

Speed rpm : 425
Rack travel in mm : (7,8...9,4)
Del.quantity cm3/ : -
 1000 s: (10,5...18,5)
Vacuum hPa : 400

Remarks:

Pin projection = 16.60...16.70 mm

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49,, max.
0.2 mm control-rod travel deduction
allowable after switchover point (of
starting cam) up to 1000 1/min.
Control-lever position 46.5,,
control-rod travel deduction must be
greater than 0.2 mm after switchover
point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With $n = 375$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

Difference in start of delivery between
max. and min. value = max. 1, angular
displacement of cam

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 17.3, ... 17.7,
(17.2...17.8,) angular displacement of
cam following start of delivery of
cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : 2,3 d
 Edition : 17.07.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 074 908
 Injection pump
 Pump designation : PES4M55C320RS167
 EP type number : 0 410 054 960
 Governor
 Governor design. : RSF375/2000M69
 Governor no. : 0 420 021 100

Customer-spec. information
 Customer : DB

Engine : OM601-2.3L

1st version kW : 60.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 20.00...22.00

Firing order : 1- 3- 4- 2

B24

Phasing : 0-90-180-270

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 4.0...4.1

100 s: (3.9...4.2)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 375.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 0.5...0.6

100 s: (0.4...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1100

Del.quantity : 40.0...41.0

1000 : (39.0...42.0)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 7,0...7,5

Speed rpm : 2200

4th rack travel in: 2500

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1,4...1,5

LOW IDLE 1

Control lever

position degrees: 11...15

Setting point w/out bumper spring

Speed rpm : 375
Rack travel in mm : 5.1

Testing:

Speed rpm : 250
Minimum rack trave: 10.20
Speed rpm : 375
Rack travel in mm : 5.00...5.20
Rack travel in mm : 3.00
Speed rpm : 450...550
Speed rpm : 1000
Maximum rack trave: 1.50

SET IDLE AUXILIARY SPRING

Speed rpm : 420
Rack travel in mm : 3,9...4,1
: (3,8...4,2)

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in m: 12.80...12.90
2nd speed rpm : 1400
Rack travel in m: 12.20...12.50
3rd speed rpm : 2000
Rack travel in m: 11.40...11.70
4th speed rpm : 500
Rack travel in m: 12.10...12.40
5th speed rpm : 800
Rack travel in m: 12.40...12.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 950
Rack travel mm : 0.00...0.20

Measurement

Speed 1/min : 1000

1st pressure hPa : 900
Rack travel in m: 0.50...0.70
2nd pressure hPa : 750
Rack travel in m: 1.80...2.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1100
Speed rpm : 1400
Del.quantity cm3/ : 39.5...41.0
1000 s: (38.5...42.0)
Spread cm3 : 2.50
1000 s: (3.00)
Aneroid pressure h: 1100

Speed rpm : 2000
Del.quantity cm3/ : 39.5...41.5
1000 s: (38.5...42.5)
Spread cm3 : 2.50
1000 s: (3.00)
Aneroid pressure h: 1100
Speed rpm : 500
Del.quantity cm3/ : 34.5...36.0
1000 s: (33.5...37.0)
Spread cm3 : 2.50
1000 s: (3.00)
Aneroid pressure h: 1100
Speed rpm : 800
Del.quantity cm3/ : 37.5...39.0
1000 s: (36.5...40.0)
Spread cm3 : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 52.0...0.0
1000 s: (52.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version

Aneroid pressure h: 1100
Speed rpm : 2200
Rack travel in mm : 7.00...7.50
Del.quantity cm3/ : 22.0...26.0
1000 s: (21.0...27.0)
Spread cm3 : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 375
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 5.0...6.0
1000 s: (4.5...9.0)
Spread cm3 : 1.00
1000 s: (1.50)

SETTING PNUEUMATIC FAST IDLE (ELA)

Speed rpm : 425
Rack travel in mm : 6,4...8,0
Del.quantity cm3/ : -
1000 s: (11,0...19,0)
Vacuum hPa : 400

Remarks:

Pin projection = 16.60...16.70 mm

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.

With $n = 375$ 1/min. and $p_u = 450$ mbar,
control rod must move quickly to
control-rod travel = 0 mm

Start-of-delivery sensor system:
adjustment and blocking with device

KDEP 1077 = 15.3, ...15.7,
(15.2...15.8,) angular displacement of
cam following start of delivery of
cylinder no. 1.

Difference in start of delivery between
max. and min. value = max. 1, angular
displacement of cam

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 2.5 C6
Edition : 03.07.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 075 935

Injection pump
Pump designation : PES5M55C320RS158-1
EP type number : 0 410 055 979
Governor
Governor design. : RSF340/2300M65-4
Governor no. : 0 420 021 144

Customer-spec. information
Customer : DB-PKW

Engine : OM602A-ECE

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
 : (2.15...2.35)

Rack travel in mm : 20.00...22.00
Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.90...14.00

Del. quantity cm³/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm³ : 0.2

100 s: (0.3)

2nd speed rpm : 315.0

Rack travel in mm : 5.4...5.6

Del. quantity cm³/ : 0.5...0.6

100 s: (0.4...0.9)

Spread cm³ : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del. quantity : 51.0...52.0

1000 : (50.0...53.0)

Spread cm³ : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8.1...8.5

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER

POSITION

Speed rpm : 1000

Rack travel in mm : 1.7...1.8

LOW IDLE 1

Control lever

position degrees: 8...12

Setting point w/out bumper spring

Speed rpm : 315
Rack travel in mm : 5.5

Testing:

Speed rpm : 220
Minimum rack trave: 8.00
Speed rpm : 315
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.50
Speed rpm : 540...640
Speed rpm : 1000
Maximum rack trave: 1.80

SET IDLE AUXILIARY SPRING

Speed rpm : 380
Rack travel in mm : 4.2...4.4
: (4.1...4.5)

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in m: 13.90...14.00
2nd speed rpm : 1600
Rack travel in m: 13.20...13.40
3rd speed rpm : 2200
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.50...0.90

Measurement

Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.90...4.10
2nd pressure hPa : 750
Rack travel in m: 5.80...6.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm3/ : 50.0...51.5
1000 s: (49.0...52.5)
Spread cm3 : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200
Del.quantity cm3/ : 48.5...50.5
1000 s: (47.5...51.5)

Spread cm3 : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm3/ : 33.0...34.0
1000 s: (32.0...35.0)
Spread cm3 : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 52.0...0.0
1000 s: (52.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version
Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.10...8.50
Del.quantity cm3/ : 29.0...33.0
1000 s: (28.0...34.0)
Spread cm3 : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 315
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 5.5...6.5
1000 s: (4.5...9.0)
Spread cm3 : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop
Speed rpm : 340
Rack travel in mm : (12.4...13.8)
Del.quantity cm3/ : -
1000 s: (41.0...49.0)
Current A : 1.8
Control lever at full-load stop
Speed rpm : 2950
Rack travel in mm : 0.0...1.0
Current
short-duration A : 3.0
Starting test
Speed rpm : 100
Del.quantity cm3/ : -
min. 1000 s: 52.0

Remarks:

Pin projection = 16.60...16.70 mm

CORRECTION OF INJECTED-FUEL QUANTITY

- Set max. change plus/minus 0.75 mm control-rod travel at correction screw on ALDA pressure box.

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

- Control-lever position 49, , max. 0.2 mm control-rod travel deduction allowable after switchover point (of starting cam) up to 1000 1/min. Control-lever position 46.5, , control-rod travel deduction must be greater than 0.2 mm after switchover point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

- Control lever at idle stop. With $n = 315$ 1/min. and $p_u = 450$ mbar, control rod must move quickly to control-rod travel = 0 mm

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 19.3, ... 19.7,
(19.2...19.8,) angular displacement of
cam following start of delivery of
cylinder no. 1.
Difference in start of delivery between
max. and min. value = max. 1, angular
displacement of cam

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 2.2 C7
Edition : 03.07.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 075 936

Injection pump
Pump designation : PES5M55C320RS158
EP type number : 0 410 055 986
Governor
Governor design. : RSF340/2300M64-14
Governor no. : 0 420 021 142

Customer-spec. information
Customer : DB-PKW

Engine : OM602A-Abgasl.

1st version kW : 92.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
: (2.15...2.35)
Rack travel in mm : 20.00...22.00
Firing order : 1- 2- 4- 5- 3

CO2

Phasing : 0-72-144-216-288

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.90...14.00

Del.quantity cm3/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 315.0

Rack travel in mm : 5.4...5.6

Del.quantity cm3/ : 0.5...0.6

100 s: (0.4...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 51.0...52.0

1000 : (50.0...53.0)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8.1...8.5

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1.7...1.8

LOW IDLE 1

Control lever

position degrees: 8...12

Setting point w/out bumper spring

3.310 V must be attained.

CORRECTION OF INJECTED-FUEL QUANTITY

-Set max. change plus/minus 0.75 mm control-rod travel at correction screw on ALDA pressure box.

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49, max. 0.2 mm control-rod travel deduction allowable after switchover point (of starting cam) up to 1000 1/min. Control-lever position 46.5, control-rod travel deduction must be greater than 0.2 mm after switchover point (of starting cam).

TESTING PNEUMATIC SHUTOFF DEVICE

-Control lever at idle stop.
With $n = 315$ 1/min. and $p_u = 450$ mbar, control rod must move quickly to control-rod travel = 0 mm

Start-of-delivery sensor system: adjustment and blocking with device KDEP 1077 = 19.3, ... 19.7, (19.2...19.8,) angular displacement of cam following start of delivery of cylinder no. 1.
Difference in start of delivery between max. and min. value = max. 1, angular displacement of cam

Testing and adjusting the control-rod-travel sensor with evaluation circuit

R2.1.3

Receiving inspection

Shift control lever to full-load stop. Set 13.5 V at stabilizer. Apply 1850 hPa to ALDA. Run up to speed of 1000 1/min; a voltage of 3.230...3.310 (3.190...3.350) V must be displayed on the digital voltmeter.

Adjustment of the control-rod travel sensor

At a speed of 1000 1/min, set fuel delivery at 23.0...24.0 (22.0...25.0) ccm/1000 strokes with control lever. Shift control-rod-travel sensor until $U = 2.095...2.105$ (2.098...2.102) V is indicated. Tighten fastening screws with 1...2 Nm. Control lever to full-load stop; voltage value of 3.230...

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 3.0 W27
Edition : 19.07.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 076 961

Injection pump
Pump designation : PES6M55C320RS157-1
EP type number : 0 410 056 991
Governor
Governor design. : RSF315/2300M65-5
Governor no. : 0 420 021 145

Customer-spec. information
Customer : DB-PKW

Engine : OM603A-ECE

1st version kW : 110.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve
: 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
: (2.15...2.35)

Rack travel in mm : 20.00...22.00

Firing order : 1- 5- 3- 6- 2- 4

C05

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.90...14.00

Del.quantity cm3/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 290.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 0.5...0.6

100 s: (0.5...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 51.0...52.0

1000 : (50.0...53.0)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8.1...8.5

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1.7...1.8

LOW IDLE 1

Control lever

position degrees: 8...12

Setting point w/out bumper spring

Speed rpm : 290
Rack travel in mm : 5.4

Testing:

Speed rpm : 200
Minimum rack travel : 7.00
Speed rpm : 290
Rack travel in mm : 5.30...5.50
Rack travel in mm : 2.50
Speed rpm : 510...610
Speed rpm : 1000
Maximum rack travel : 1.80

SET IDLE AUXILIARY SPRING

Speed rpm : 360
Rack travel in mm : 4.2...4.4
: (4.1...4.5)

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in m: 13.90...14.00
2nd speed rpm : 1600
Rack travel in m: 13.20...13.40
3rd speed rpm : 2200
Rack travel in m: 12.30...12.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 1000
Pressure hPa : 1600
Rack travel mm : 0.50...0.90

Measurement

Speed 1/min : 1000

1st pressure hPa : 1050
Rack travel in m: 3.90...4.10
2nd pressure hPa : 750
Rack travel in m: 5.80...6.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1850
Speed rpm : 1600
Del.quantity cm3/ : 50.0...51.5
1000 s: (49.0...52.5)
Spread cm3 : 2.50
1000 s: (3.0)
Aneroid pressure h: 1850
Speed rpm : 2200
Del.quantity cm3/ : 48.5...50.5
1000 s: (47.5...51.5)

Spread cm3 : 2.50
1000 s: (3.00)
Aneroid pressure h: 1050
Speed rpm : 1000
Del.quantity cm3/ : 33.0...34.0
1000 s: (32.0...35.0)
Spread cm3 : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 52.0...0.0
1000 s: (52.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version

Aneroid pressure h: 1850
Speed rpm : 2500
Rack travel in mm : 8.10...8.50
Del.quantity cm3/ : 29.0...33.0
1000 s: (28.0...34.0)
Spread cm3 : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 290
Rack travel in mm : 5.30...5.50
Del.quantity cm3/ : 5.5...6.5
1000 s: (5.0...9.5)
Spread cm3 : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop

Speed rpm : 315
Rack travel in mm : (12.8...14.2)
Del.quantity cm3/ : -
1000 s: (42.0...49.0)

Current A : 1.8

Control lever at full-load stop

Speed rpm : 2950
Rack travel in mm : 0.0...1.0
Current

short-duration A : 3.0

Starting test

Speed rpm : 100
Del.quantity cm3/ : -
min. 1000 s: 52.0

Remarks:

Pin projection = 16.60...16.70 mm

CORRECTION OF INJECTED-FUEL QUANTITY

- Set max. change plus/minus 0.75 mm control-rod travel at correction screw on ALDA pressure box.

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

- Control-lever position 49, , max. 0.2 mm control-rod travel deduction allowable after switchover point (of starting cam) up to 1000 1/min. Control-lever position 46.5, , control-rod travel deduction must be greater than 0.2 mm after switchover point (of starting cam).

CHECKING THE PNEUMATIC SHUTOFF BOX

- Control lever up against idle stop. At $n = 290$ 1/min and $p_u = 450$ mbar control rod must move briskly to control-rod travel = 0 mm

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 19.3, ... 19.7, .
(19.2...19.8,) angular displacement of
cam following start of delivery of
cylinder no. 1.
Difference in start of delivery between
max. and min. value = max. 1, angular
displacement of cam

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : Mb 3.0 W 28
Edition : 19.07.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 076 962

Injection pump
Pump designation : PES6M55C320RS157
EP type number : 0 410 056 993
Governor
Governor design. : RSF315/2300M64-15
Governor no. : 0 420 021 143

Customer-spec. information
Customer : DB-PKW

Engine : OM603A-Abgasl.

1st version kW : 110.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.20...2.30
: (2.15...2.35)
Rack travel in mm : 20.00...22.00
Firing order : 1- 5- 3- 6- 2- 4

C08

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.90...14.00

Del.quantity cm3/ : 5.1...5.2

100 s: (5.0...5.3)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 290.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 0.5...0.6

100 s: (0.5...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1850

Del.quantity : 51.0...52.0

1000 : (50.0...53.0)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 8.1...8.5

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1.7...1.8

LOW IDLE 1

Control lever

position degrees: 8...12

Setting point w/out bumper spring

C09

CORRECTION OF INJECTED-FUEL QUANTITY

- Set max. change plus/minus 0.75 mm control-rod travel at correction screw on ALDA pressure box.

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

- Control-lever position 49, , max. 0.2 mm control-rod travel deduction allowable after switchover point (of starting cam) up to 1000 1/min. Control-lever position 46.5, , control-rod travel deduction must be greater than 0.2 mm after switchover point (of starting cam).

CHECKING THE PNEUMATIC SHUTOFF BOX

- Control lever up against idle stop. At $n = 290$ 1/min and $p_u = 450$ mbar control rod must move briskly to control-rod travel = 0 mm

Start-of-delivery sensor system: adjustment and blocking with device KDEP 1077 = 19.3, ... 19.7, (19.2...19.8,) angular displacement of cam following start of delivery of cylinder no. 1. Difference in start of delivery between max. and min. value = max. 1, angular displacement of cam

Testing and adjusting the control-rod-travel sensor with evaluation circuit

R2.1.3

Receiving inspection

Shift control lever to full-load stop. Set 13.5 V at stabilizer. Apply 1850 hPa to ALDA. Run up to speed of 1000 1/min; a voltage of 3.230...3.310 (3.190...3.350) V must be displayed on the digital voltmeter.

Adjustment of the control-rod travel sensor

At a speed of 1000 1/min, set fuel delivery at 23.0...24.0 (22.0...25.0) ccm/1000 strokes with control lever. Shift control-rod-travel sensor until $U = 2.095...2.105$ (2.098...2.102) V is indicated. Tighten fastening screws

with 1...2 Nm. Control lever to full-load stop; voltage value of 3.230...3.310 V must be attained.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 3.0 W31
 Edition : 03.07.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 076 966
 Injection pump
 Pump designation : PES6M55C320RS174
 EP type number : 0 410 056 988
 Governor
 Governor design. : RSF315/2300M60-27
 Governor no. : 0 420 021 134

Customer-spec. information
 Customer : DB-PKW

Engine : OM603-Abgl. MJ90

1st version kW : 76.0

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 469 990 351

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 491 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 1.70...1.80
 : (1.65...1.85)

Rack travel in mm : 20.00...22.00

Firing order : 1- 5- 3- 6- 2- 4

C11

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.00 (1.00)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.40...12.50

Del. quantity cm3/ : 3.1...3.2

100 s: (3.0...3.3)

Spread cm3 : 0.2

100 s: (0.3)

2nd speed rpm : 290.0

Rack travel in mm : 6.6...6.8

Del. quantity cm3/ : 0.5...0.6

100 s: (0.5...0.9)

Spread cm3 : 0.1

100 s: (0.1)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1100

Del. quantity : 31.5...32.5

1000 : (30.5...33.5)

Spread cm3 : 2.50

1000 : (3.00)

RATED SPEED

1st version

Control lever

position degrees: 50...0

3rd rack travel in: 9.1...9.5

Speed rpm : 2500

4th rack travel in: 2950

Speed rpm : 0.00...1.00

SET IDLE CONTROL LEVER POSITION

Speed rpm : 1000

Rack travel in mm : 1.4...1.5

LOW IDLE 1

Control lever

position degrees: 12...16

Setting point w/out bumper spring

Speed rpm : 290
Rack travel in mm : 6.7

Testing:

Speed rpm : 220
Minimum rack trave: 7.00
Speed rpm : 290
Rack travel in mm : 6.60...6.80
Rack travel in mm : 2.50
Speed rpm : 570...670
Speed rpm : 1000
Maximum rack trave: 1.50

SET IDLE AUXILIARY SPRING

Speed rpm : 360
Rack travel in mm : 5.2...5.4
: (5.1...5.5)

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in m: 12.40...12.50
2nd speed rpm : 1800
Rack travel in m: 11.80...12.00
3rd speed rpm : 2200
Rack travel in m: 11.50...11.70

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 1000
Pressure hPa : 950
Rack travel mm : 0.00...0.20

Measurement

Speed 1/min : 1000

1st pressure hPa : 900
Rack travel in m: 0.50...0.70
2nd pressure hPa : 750
Rack travel in m: 1.80...2.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1100
Speed rpm : 1800
Del.quantity cm3/ : 34.5...36.0
1000 s: (33.5...37.0)
Spread cm3 : 2.50
1000 s: (3.0)
Aneroid pressure h: 1100
Speed rpm : 2200
Del.quantity cm3/ : 33.0...35.0
1000 s: (32.0...36.0)

Spread cm3 : 2.50
1000 s: (3.00)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 52.0...0.0
1000 s: (52.0...0.0)
Rack travel in mm : 20.10...0.00

HIGH IDLE

1st version

Aneroid pressure h: 1100
Speed rpm : 2500
Rack travel in mm : 9.10...9.50
Del.quantity cm3/ : 22.0...26.0
1000 s: (21.0...27.0)
Spread cm3 : 2.50
1000 s: (3.00)

LOW IDLE

Speed rpm : 290
Rack travel in mm : 6.60...6.80
Del.quantity cm3/ : 5.5...6.5
1000 s: (5.0...9.5)
Spread cm3 : 1.00
1000 s: (1.50)

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

Control lever at idle stop

Speed rpm : 315
Rack travel in mm : (12.8...14.2)
Del.quantity cm3/ : -
1000 s: (28.0...36.0)

Current A : 1.8

Control lever at full-load stop

Speed rpm : 2950
Rack travel in mm : 0.0...1.0
Current

short-duration A : 3.0

Starting test

Speed rpm : 100
Del.quantity cm3/ : -
min. 1000 s: 52.0

Remarks:

Pin projection = 16.60...16.70 mm

CHECKING THE IDLE-SPEED AUXILIARY SPRING CUTOFF

-Control-lever position 49, max.
0.2 mm control-rod travel deduction

allowable after switchover point (of starting cam) up to 1000 1/min.
Control-lever position 46.5, .
control-rod travel deduction must be greater than 0.2 mm after switchover point (of starting cam).

Difference in start of delivery between max. and min. value = max. 1, angular displacement of cam

Start-of-delivery sensor system:
adjustment and blocking with device
KDEP 1077 = 17.3, ... 17.7, .
(17.2...17.8,) angular displacement of cam following start of delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 3,0 b 1
 Edition : 07.04.89
 Replaces : 11.3.88
 Test oil : ISO-4113
 Combination no. : 0 400 463 146
 Injection pump
 Pump designation : PES3A75D410/3RS1324
 EP type number : 0 410 473 977
 Governor
 Governor design. : RSV325...900A7C602-1
 L
 Governor no. : 0 420 232 388

Customer-spec. information
 Customer : KHD

Engine : F3L912

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 880

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 4.6...4.7

100 s: (4.5...4.9)

Spread cm3 : 0.2

100 s: (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 8.2...8.4

Del.quantity cm3/ : 0.7...1.3

100 s: (0.5...1.4)

Spread cm3 : 0.2

100 s: (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 880

Del.quantity : 46.5...47.5

1000 : (45.0...49.0)

Spread cm3 : 2.50

1000 : (4.00)

RATED SPEED

1st version

Control lever

position degrees: 55...63

Testing:

1st rack travel in: 10.60

Speed rpm : 920...930

2nd rack travel in: 4.00

Speed rpm : 965...995

3rd rack travel in: 4.00

Speed rpm : 980...1010

4th rack travel in: 1145
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.8

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 8.20...8.40
Rack travel in mm : 2.00
Speed rpm : 515...575

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 880
Rack travel in m: 11.60...11.70
2nd speed rpm : 500
Rack travel in m: 13.00...13.10
3rd speed rpm : 700
Rack travel in m: 12.20...12.30

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700
Del.quantity cm3/ : 49.5...51.5
1000 s: (47.5...53.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.60
Speed rpm : 920...930

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...110.0
1000 s: (97.0...113.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LOM 3,7 a 1
 Edition : 24.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 474 160
 Injection pump
 Pump designation : PES4A80D420LS1345
 EP type number : 0 410 484 020
 Governor
 Governor design. : RSV350..1300A5C2183
 Governor no. : 0 420 233 194

Customer-spec. information
 Customer : LOMBARDINI

Engine : LDA 934

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42
 Overflow valve
 : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.70...2.80
 : (2.65...2.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 9.50...9.60
 Del.quantity cm3/ : 6.0...6.1
 100 s: (5.8...6.2)
 Spread cm3 : 0.2
 100 s: (0.4)

2nd speed rpm : 350.0
 Rack travel in mm : 6.4...6.6
 Del.quantity cm3/ : 0.8...1.4
 100 s: (0.6...1.5)
 Spread cm3 : 0.2
 100 s: (0.3)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 60.0...61.0
 1000 : (58.5...62.5)
 Spread cm3 : 2.50
 1000 : (4.00)

RATED SPEED

1st version
 Control lever
 position degrees: 46...54

Testing:
 1st rack travel in: 8.50
 Speed rpm : 1290...1300
 2nd rack travel in: 4.00
 Speed rpm : 1300...1330
 3rd rack travel in: 4.00
 Speed rpm : 1315...1345
 4th rack travel in: 1490
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 11...19

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 350

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 415...475

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.50

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 135.0...145.0

1000 s: (132.0...148.0)

Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 12,7 p5
 Edition : 28.04.89
 Replaces : 7.2.89
 Test oil : ISO-4113
 Combination no. : 0 400 648 111
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQ300/1250AB987DL
 Governor no. : 0 420 202 277

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 188.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...6.7

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.5

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 96.5...98.5

1000 : (94.5...100.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.40

Speed rpm : 1295...1310

2nd rack travel in: 4.00

Speed rpm : 1335...1365

4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 345...385
Speed rpm : 550
Maximum rack trave: 1.00

TORQUE CONTROL

Dimension a mm : 0.25
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.40...10.50
2nd speed rpm : 550
Rack travel in m: 10.90...11.00
3rd speed rpm : 850
Rack travel in m: 10.60...10.80
4th speed rpm : 970
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 95.0...98.0
1000 s: (92.5...100.5)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1295...1310

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 9.0...15.0
1000 s: (6.5...17.5)
Spread cm3 : 5.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 12,7 p6
 Edition : 11.05.89
 Replaces : 7.2.89
 Test oil : ISO-4113
 Combination no. : 0 400 648 142
 Injection pump
 Pump designation : PE8A95D410LS2608
 EP type number : 0 410 698 988
 Governor
 Governor design. : RQV350...1250AB990-1
 L
 Governor no. : 0 420 212 182

Customer-spec. information
 Customer : KHD

Engine : F8L413F

1st version kW : 174.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 7- 2- 6- 5-
 4- 3

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1225

Rack travel in mm : 10.00...10.10

Del.quantity cm3/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm3 : 0.5

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
 travel mm : 1.20...1.30

2nd speed rpm : 600
 travel mm : 3.80...4.00

3rd speed rpm : 900
 travel mm : 5.20...5.50

4th speed rpm : 1315
 travel mm : 9.30...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1225

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1225

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 9.00
Speed rpm : 1265...1275
2nd rack travel in: 4.00
Speed rpm : 1300...1330
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 350
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION

Speed rpm : 370...480

TORQUE CONTROL

Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1225
Rack travel in m: 10.00...10.10
2nd speed rpm : 500
Rack travel in m: 10.40...10.50
3rd speed rpm : 950
Rack travel in m: 10.20...10.40

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 90.5...93.5
1000 s: (88.0...96.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1265...1275

STARTING FUEL DELIVERY

C21

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 14.70...15.30

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 15,8 L
Edition : 07.04.89
Replaces : 7.2.89
Test oil : ISO-4113

Combination no. : 0 400 649 196

Injection pump
Pump designation : PE10A95D610/4LS2452
EP type number : 0 410 699 998
Governor
Governor design. : RQV750AB996L
Governor no. : 0 420 212 091

Customer-spec. information
Customer : KHD

Engine : F10L413F

1st version kW : 162.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Rack travel in mm : 9.00...12.00

Firing order : 1-10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315
Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 710

Rack travel in mm : 10.60...10.70

Del.quantity cm3/ : 9.7...9.9

100 s: (9.5...10.1)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 0.6...1.6

100 s: (0.3...1.8)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 755

travel mm : 5.20...5.40

2nd speed rpm : 785

travel mm : 7.40...7.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 710

Del.quantity : 97.0...99.0

1000 : (95.0...101.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.60

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 772...787

START CUT-OUT

Speed 1/min · 660 (680)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Compressor

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 16,0 f2
 Edition : 02.06.89
 Replaces : 7.84
 Test oil : ISO-4113
 Combination no. : 0 400 649 238
 Injection pump
 Pump designation : PE10A90D520/5LS2567
 EP type number : 0 410 699 108
 Governor
 Governor design. : RQV250...1250AB1182R
 Governor no. : 0 420 213 098

Customer-spec. information
 Customer : MAN

Engine : D 2530 MXF

1st version kW : 235.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60
 : (1.45...1.65)

Rack travel in mm : 9.00...12.00

C24

Firing order : 10- 9- 4- 1- 8- 7
 - 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
 216-261-288-333

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 13.00...13.10

Del.quantity cm3/ : 10.1...10.2

100 s: (9.9...10.4)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 0.7...1.3

100 s: (0.5...1.5)

Spread cm3 : 0.2

100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 200

travel mm : 0.70...0.90

2nd speed rpm : 550

travel mm : 3.30...3.70

3rd speed rpm : 1000

travel mm : 6.20...6.40

4th speed rpm : 1350

travel mm : 9.40...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1210

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 101.5...102.5

1000 : (99.5...104.5)

Spread cm3 : 3.00

1000 : (4.50)

RATED SPEED

1st version
Control lever
position degrees: 45...53

Testing:

1st rack travel in: 12.00
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1385...1415
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 9...17

Testing:

Speed rpm : 100
Minimum rack travel: 8.80
Speed rpm : 250
Rack travel in mm : 7.20...7.40

CONSTANT REGULATION

Speed rpm : 330...440

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 13.00...13.10
2nd speed rpm : 500
Rack travel in m: 13.30...13.40
3rd speed rpm : 955
Rack travel in m: 13.20...13.40
4th speed rpm : 1120
Rack travel in m: 13.10...13.30

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm³/ : 0.0...94.0
1000 s: (0.0...96.5)
1000 s: (5.)
Speed rpm : 800
Del.quantity cm³/ : 95.5...98.5
1000 s: (93.5...100.5)
1000 s: (5.50)

BREAKAWAY

1st version

C25

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...145.0
1000 s: (132.0...148.0)

Remarks:

: MAN-NR. 2-7448

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 6,5 c
Edition : 21.04.89
Replaces : 22.12.88
Test oil : ISO-4113

Combination no. : 0 400 656 161

Injection pump
Pump designation : PE6A90D321RS2690
EP type number : 0 410 696 182
Governor
Governor design. : RQV250...1300AB1238R
Governor no. : 0 420 213 109

Customer-spec. information
Customer : ENASA

Engine : 94T 3AW 31500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
: (2.10...2.30)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 12.20...12.30

Del.quantity cm³/ : 9.2...9.3
100 s : (9.0...9.5)

Spread cm³ : 0.3
100 s : (0.4)

2nd speed rpm : 250.0
Rack travel in mm : 8.1...8.3
Del.quantity cm³/ : 1.2...1.8
100 s : (1.0...2.0)

Spread cm³ : 0.2
100 s : (0.4)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.20

2nd speed rpm : 300
travel mm : 2.30...2.70

3rd speed rpm : 1340
travel mm : 8.60...8.80

4th speed rpm : 1465
travel mm : 9.70...10.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 1300

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1300
Aneroid pressure h: 700
Del.quantity : 92.5...93.5
1000 : (90.5...95.5)

Spread cm³ : 3.00
1000 : (4.50)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Testing:
1st rack travel in: 11.20
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1445...1475
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 100
Minimum rack travel: 9.60
Speed rpm : 250
Rack travel in mm : 8.10...8.30

CONSTANT REGULATION
Speed rpm : 285...390

TORQUE CONTROL
Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 12.20...12.30
2nd speed rpm : 500
Rack travel in m: 12.60...12.80
3rd speed rpm : 900
Rack travel in m: 12.30...12.50

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 12.30...12.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.50...10.60
2nd pressure hPa : 490
Rack travel in m: 12.00...12.10
3rd pressure hPa : 400
Rack travel in m: 11.10...11.30

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

C27

Aneroid pressure h: 700
Speed rpm : 900
Del.quantity cm³/ : 94.0...98.0
1000 s: (91.5...100.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 56.0...57.0
1000 s: (54.0...59.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.20
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 160.0...170.0
1000 s: (157.0...173.0)
Rack travel in mm : 19.50...21.00

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : HAN 7,2 b 3
 Edition : 24.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 674 047
 Injection pump
 Pump designation : PE4A95D420RS2662-1
 EP type number : 0 410 694 994
 Governor
 Governor design. : RSV350...1100A8C2222
 -1R
 Governor no. : 0 420 233 251

Customer-spec. information
 Customer : HANOMAG

Engine : D944T-50E

1st version kW : 105.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 2- 4- 3

Phasing : 0-90-180-270

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1080

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 11.2...11.4

100 s: (11.0...11.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.2...6.4

Del.quantity cm3/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1080

Del.quantity : 112.0...114.0

1000 : (110.0...116.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 51...59

Testing:

1st rack travel in: 10.40

Speed rpm : 1120...1130

2nd rack travel in: 4.00

Speed rpm : 1165...1195

3rd rack travel in: 4.00

Speed rpm : 1185...1215

4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.5

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 490...550

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1080
Rack travel in m: 11.40...11.50
2nd speed rpm : 500
Rack travel in m: 11.90...12.00
3rd speed rpm : 890
Rack travel in m: 11.60...11.80

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm³/ : 109.0...112.0
1000 s: (106.5...114.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.40
Speed rpm : 1120...1130

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 125.0...135.0
1000 s: (122.0...138.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Wheel loader

D01

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 s
 Edition : 24.05.89
 Replaces : 27.10.88
 Test oil : ISO-4113

Combination no. : 0 400 836 036

Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RQV300...1250AB1188-1L
 Govenner no. : 0 420 212 205

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 118.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

D02

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 8.7...8.8

100 s: (8.5...9.0)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 300.0

Rack travel in mm : 7.3...7.5

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm3 : 0.2

100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.40

2nd speed rpm : 380
 travel mm : 2.50...2.70

3rd speed rpm : 430
 travel mm : 3.10...3.30

4th speed rpm : 1300
 travel mm : 8.90...9.00

5th speed rpm : 1390
 travel mm : 10.10...10.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1265

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 700

Del.quantity : 87.5...88.5

1000 : (85.5...90.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 63...71

Testing:

1st rack travel in: 11.30

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1370...1400

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 10...18

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 350...460

TORQUE CONTROL

Dimension a mm : 0.80

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 12.30...12.40

2nd speed rpm : 500

Rack travel in m: 13.10...13.20

3rd speed rpm : 820

Rack travel in m: 12.50...12.70

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : -

Rack travel mm : 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : 350

Rack travel in m: 11.60...11.80

3rd pressure hPa : 700

Rack travel in m: 12.70...12.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 750

Del.quantity cm3/ : 88.5...90.5

1000 s: (86.0...93.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 62.0...64.0

1000 s: (60.0...66.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 120.0...130.0

1000 s: (117.0...133.0)

Rack travel in mm : 17.00...17.40

Remarks:

:

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 s 1
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 836 040
 Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RQV300...1250A1131-2
 Governor no. : 0 420 212 218

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 96.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 10.70...10.80

Del.quantity cm³/ : 7.0...7.1

100 s: (6.8...7.3)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 300.0

Rack travel in mm : 7.7...7.9

Del.quantity cm³/ : 0.8...1.4

100 s: (0.6...1.6)

Spread cm³ : 0.2

100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.30

2nd speed rpm : 385

travel mm : 2.60...2.80

3rd speed rpm : 435

travel mm : 3.10...3.30

4th speed rpm : 1295

travel mm : 8.90...9.00

5th speed rpm : 1370

travel mm : 9.70...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1235

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 70.5...71.5

1000 : (68.5...73.5)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 68...76

Testing:

1st rack travel in: 9.70
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1350...1380

LOW IDLE 1

Control lever
position degrees: 17...25

Testing:

Speed rpm : 100
Minimum rack trave: 8.20
Speed rpm : 300
Rack travel in mm : 6.60...6.80

CONSTANT REGULATION

Speed rpm : 345...465

TORQUE CONTROL

Dimension a mm : 0.55
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 10.70...10.80
2nd speed rpm : 790
Rack travel in m: 11.20...11.30
3rd speed rpm : 910
Rack travel in m: 11.00...11.20
4th speed rpm : 1105
Rack travel in m: 10.80...11.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 775
Del.quantity cm3/ : 67.0...69.0
1000 s: (64.5...71.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 17.00...17.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 b 8
Edition : 02.05.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 836 042

Injection pump
Pump designation : PES6A100D320/3RS2691
-2

EP type number : 9 410 230 028

Governor

Governor design. : RQV400...1250AB1235-
1R

Governer no. : 0 420 213 114

Customer-spec. information

Customer : C.D.C.

Engine : 6 CT

1st version kW : 150.0

Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil :
inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

D06

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Phasing

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.30...11.40

Del.quantity cm3/ : 11.0...11.3

100 s: (10.8...11.5)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.5...1.9

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1400

travel mm : 8.40...8.50

2nd speed rpm : 1500

travel mm : 9.10...9.30

3rd speed rpm : 350

travel mm : 0.70...1.10

4th speed rpm : 450

travel mm : 1.60...2.00

5th speed rpm : 250

travel mm : 0.10...0.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1550

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250
Aneroid pressure h: 700
Del.quantity : 110.0...113.0
1000 : (108.0...115.0)
Spread cm3 : 4.00
1000 : (6.50)

RATED SPEED

1st version
Control lever
position degrees: 55...63

Testing:
1st rack travel in: 10.30
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1420...1450
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...14
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.2

Testing:
Speed rpm : 250
Minimum rack travel: 7.60
Speed rpm : 400
Rack travel in mm : 5.10...5.30

CONSTANT REGULATION
Speed rpm : 350...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.20...11.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 280
Rack travel in m: 10.50...10.70
3rd pressure hPa : 320
Rack travel in m: 10.80...11.20

START CUT-OUT

Speed 1/min : 270 (280)

007

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 86.5...90.5
1000 s: (84.5...92.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 160.0...180.0
1000 s: (155.0...185.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.10...5.30
Del.quantity cm3/ : 15.5...19.5
1000 s: (13.0...22.0)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3914626

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 a 11
 Edition : 21.04.89
 Replaces : 22.12.88
 Test oil : ISO-4113

Combination no. : 0 400 844 091

Injection pump
 Pump designation : PES4A90D410RS2666-2
 EP type number : 0 410 894 033
 Governor
 Governor design. : RQV300...1400AB1065-12L
 Governor no. : 0 420 212 207

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 61.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 10.50...10.60

Del. quantity cm³/ : 5.9...6.0
 100 s: (5.7...6.2)

Spread cm³ : 0.3
 100 s: (0.5)

2nd speed rpm : 300.0
 Rack travel in mm : 8.6...8.8
 Del. quantity cm³/ : 0.8...1.2
 100 s: (0.6...1.4)

Spread cm³ : 0.2
 100 s: (0.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 0.80...1.30
 2nd speed rpm : 500
 travel mm : 2.30...2.80
 3rd speed rpm : 750
 travel mm : 4.10...4.30
 4th speed rpm : 1500
 travel mm : 8.50...8.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1400
 Del. quantity : 59.0...60.0
 1000 : (57.0...62.0)

Spread cm³ : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 58...66

Testing:
 1st rack travel in: 9.50

Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1535...1565
4th rack travel in: 1700
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 20...28

Testing:
Speed rpm : 100
Minimum rack travel: 10.20
Speed rpm : 300
Rack travel in mm : 8.60...8.80

CONSTANT REGULATION
Speed rpm : 540...680

TORQUE CONTROL
Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 10.50...10.60
2nd speed rpm : 475
Rack travel in m: 11.50...11.60
3rd speed rpm : 850
Rack travel in m: 10.90...11.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 475
Del.quantity cm³/ : 45.0...47.0
1000 s: (42.5...49.5)
Speed rpm : 850
Del.quantity cm³/ : 47.5...50.5
1000 s: (45.0...53.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 17.00...17.40

Remarks:

:

Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 a 12
Edition : 21.04.89
Replaces : 7.2.89
Test oil : ISO-4113

Combination no. : 0 400 844 094

Injection pump
Pump designation : PES4A90D410RS2666-2
EP type number : 0 410 894 033
Governor
Governor design. : RQV300...1400AB1065-12L
Governor no. : 0 420 212 207

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 61.0
Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 10.50...10.60

Del.quantity cm3/ : 5.9...6.0

100 s: (5.7...6.2)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 300.0

Rack travel in mm : 8.6...8.8

Del.quantity cm3/ : 0.8...1.2

100 s: (0.6...1.4)

Spread cm3 : 0.2

100 s: (0.4)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 0.80...1.30

2nd speed rpm : 500
travel mm : 2.30...2.80

3rd speed rpm : 750
travel mm : 4.10...4.30

4th speed rpm : 1500
travel mm : 8.50...8.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1400
Del.quantity : 59.0...60.0
1000 : (57.0...62.0)
Spread cm3 : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:
1st rack travel in: 9.50

Speed rpm : 1440...1450
2nd rack travel in: 4.00
Speed rpm : 1535...1565
4th rack travel in: 1700
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 20...28

Testing:

Speed rpm : 100
Minimum rack travel: 10.20
Speed rpm : 300
Rack travel in mm : 8.60...8.80

CONSTANT REGULATION

Speed rpm : 540...680

TORQUE CONTROL

Dimension a mm : 1.00
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 10.50...10.60
2nd speed rpm : 475
Rack travel in m: 11.50...11.60
3rd speed rpm : 850
Rack travel in m: 10.90...11.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 475
Del.quantity cm³/ : 45.0...47.0
1000 s: (42.5...49.5)
Speed rpm : 850
Del.quantity cm³/ : 47.5...50.5
1000 s: (45.0...53.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 17.00...17.40

Remarks:

Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 v 10
 Edition : 24.05.89
 Replaces : 25.3.88
 Test oil : ISO-4113

Combination no. : 0 400 846 493

Injection pump
 Pump designation : PES6A90D410RS2596
 EP type number : 0 410 896 073
 Governor
 Governor design. : RQV300...1400AB1120-1L
 Governor no. : 0 420 212 157

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM352A

1st version kW : 124.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1400

Rack travel in mm : 11.90...12.00

Del.quantity cm3/ : 7.3...7.4
 100 s: (7.1...7.6)

Spread cm3 : 0.3
 100 s: (0.4)

2nd speed rpm : 300.0
 Rack travel in mm : 8.5...8.7
 Del.quantity cm3/ : 0.9...1.5
 100 s: (0.7...1.7)

Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1500
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1400
 Aneroid pressure h: 700
 Del.quantity : 73.5...74.5
 1000 : (71.5...76.5)

Spread cm3 : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 59...67

Testing:
 1st rack travel in: 10.90
 Speed rpm : 1440...1450
 2nd rack travel in: 4.00
 Speed rpm : 1570...1600
 4th rack travel in: 1750
 Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 22...30

Testing:

Speed rpm : 100
Minimum rack trave: 10.10
Speed rpm : 300
Rack travel in mm : 8.50...8.70

CONSTANT REGULATION

Speed rpm : 590...660

TORQUE CONTROL

Dimension a mm : 1.10
Torque control curve - 1st version
1st speed rpm : 1400
Rack travel in m: 11.90...12.00
2nd speed rpm : 500
Rack travel in m: 13.00...13.10
3rd speed rpm : 1000
Rack travel in m: 12.70...12.90
4th speed rpm : 1200
Rack travel in m: 12.10...12.40

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.00...12.10
2nd pressure hPa : 320
Rack travel in m: 12.70...12.80
3rd pressure hPa : 220
Rack travel in m: 12.20...12.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 500
Del.quantity cm3/ : 67.5...69.5
1000 s: (65.5...71.5)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 56.0...58.0
1000 s: (54.0...60.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1440...1450

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 71.0...81.0
1000 s: (68.0...84.0)
Rack travel in mm : 14.90...15.30

Remarks:

Set shutoff stop to contact at
3.0...3.5 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 p 2
 Edition : 14.6.89
 Replaces : 07.2.89
 Test oil : ISO-4113
 Combination no. : 0 400 846 538
 Injection pump
 Pump designation : PES6A95D320RS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RQ300/1300AB1204R
 Governor no. : 0 420 201 640

Customer-spec. information
 Customer : DAF

Engine : DNT 620

1st version kW : 130.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 7.50...10.50

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference, CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.50...11.60

Del.quantity cm3/ : 7.7...7.8

100 s: (7.5...8.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...6.7

Del.quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 850

Rack travel in mm : 16.80...18.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del.quantity : 77.5...78.5

1000 : (75.5...80.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 850

Rack travel in mm : 17.6

Testing:
1st rack travel in: 9.70
Speed rpm : 1350...1365
2nd rack travel in: 4.00
Speed rpm : 1420...1450
4th rack travel in: 1550
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.6

Testing:
Speed rpm : 100
Minimum rack travel: 7.60
Speed rpm : 300
Rack travel in mm : 6.50...6.70
Rack travel in mm : 2.00
Speed rpm : 545...585

TORQUE CONTROL

Dimension a mm : 0.55
Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 9.60...9.70
2nd speed rpm : 850
Rack travel in m: 11.20...11.40
3rd speed rpm : 935
Rack travel in m: 10.80...11.10
4th speed rpm : 1080
Rack travel in m: 10.60...11.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.50...11.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.20...11.40
2nd pressure hPa : 250
Rack travel in m: 11.40...11.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

D15

Aneroid pressure h: 700
Speed rpm : 1290
Del.quantity cm3/ : 73.0...75.0
1000 s: (70.5...77.5)
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 65.0...67.0
1000 s: (63.0...69.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1350...1365

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

When adjusting the governor, observe
service information on microcard
W-400/008/D15

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 m 1
 Edition : 02.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 569
 Injection pump
 Pump designation : PES6A95D32ORS2770
 EP type number : 0 410 896 905
 Governor
 Governor design. : RQV350...1350AB1236-3R
 Governor no. : 0 420 213 112
 Customer-spec. information
 Customer : NAVISTAR
 Engine : DT 360
 1st version kW : 127.0
 Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42
 Overflow valve : 2 417 413 038
 Inlet press., bar : 2.80
 Test nozzle holder assembly : 1 688 901 110
 Opening pressure, bar : 250...253
 Orifice plate diameter mm : 0,5
 Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.75...2.85
 : (2.70...2.90)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1350

Rack travel in mm : 11.20...11.30

Del. quantity cm³/ : 7.2...7.4

100 s: (7.0...7.6)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.7...5.9

Del. quantity cm³/ : 1.3...1.7

100 s: (1.0...1.9)

Spread cm³ : 0.6

100 s: (0.8)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1400

travel mm : 8.50...8.50

2nd speed rpm : 1500

travel mm : 9.30...9.50

3rd speed rpm : 350

travel mm : 1.00...1.00

4th speed rpm : 450

travel mm : 1.90...2.40

5th speed rpm : 250

travel mm : 0.10...0.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1535

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1350

Aneroid pressure h: 900
Del.quantity : 72.0...74.0
1000 : (70.0...76.0)
Spread cm3 : 4.00
1000 : (6.50)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:
1st rack travel in: 10.20
Speed rpm : 1400...1430
2nd rack travel in: 4.00
Speed rpm : 1525...1535
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 250
Minimum rack travel: 7.80
Speed rpm : 350
Rack travel in mm : 5.70...5.90

CONSTANT REGULATION
Speed rpm : 350...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.20...11.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.40...8.60
2nd pressure hPa : 240
Rack travel in m: 9.30...9.40
3rd pressure hPa : 480
Rack travel in m: 10.70...11.10

START CUT-OUT

Speed 1/min : 290 (300)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 48.0...52.0
1000 s: (46.0...54.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 1400...1430

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.70...5.90
Del.quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:
: NAVISTAR #
: 1811834C93

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 m 2
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 570
 Injection pump
 Pump designation : PES6A95D32ORS2770
 EP type number : 0 410 896 905
 Governor
 Governor design. : RQV350...1350AB1236-
 2R
 Governor no. : 0 420 213 111

Customer-spec. information
 Customer : NAVISTAR

Engine : DTA-360

1st version kW : 134.0
 Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 2.80

Test nozzle holder
 assembly : 1 688 901 110

Opening
 pressure, bar : 250...253

Orifice plate
 diameter mm : 0,5

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.75...2.85
 : (2.70...2.90)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1350

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 7.1...7.3

100 s: (6.9...7.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.7...2.1

100 s: (1.4...2.3)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1400

travel mm : 8.50...8.50

2nd speed rpm : 1500

travel mm : 9.30...9.50

3rd speed rpm : 350

travel mm : 1.00...1.00

4th speed rpm : 450

travel mm : 1.90...2.40

5th speed rpm : 250

travel mm : 0.10...0.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1535

Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1350

Aneroid pressure h: 700
Del.quantity : 71.5...73.5
1000 : (69.5...75.5)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 44...52

Testing:
1st rack travel in: 10.00
Speed rpm : 1405...1435
2nd rack travel in: 4.00
Speed rpm : 1515...1525
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 8.50
Speed rpm : 350
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 460...520

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.00...11.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.30...8.50
2nd pressure hPa : 170
Rack travel in m: 9.00...9.10
3rd pressure hPa : 300
Rack travel in m: 10.20...10.60

START CUT-OUT

Speed 1/min : 280 (300)

FUEL DELIVERY CHARACTERISTICS

1st version

D19

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 52.0...56.0
1000 s: (50.0...58.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1405...1435

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 17.0...21.0
1000 s: (14.5...23.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: NAVISTAR #
: 1811835C93

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 35
Edition : 21.04.89
Replaces : 5.8.88
Test oil : ISO-4113

Combination no. : 0 400 863 014

Injection pump
Pump designation : PES3A85D410/3RS2642
EP type number : 0 410 883 989
Governor
Governor design. : RSV325...1000A8C2102
-2L
Governor no. : 0 420 232 507

Customer-spec. information
Customer : KHD

Engine : F3L913

1st version kW : 37.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

D20

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.00...10.10

Del.quantity cm³/ : 6.2...6.3

100 s: (6.0...6.5)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.5...7.7

Del.quantity cm³/ : 0.9...1.5

100 s: (0.7...1.7)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 62.5...63.5

1000 : (60.5...65.5)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 9.00

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1060...1090

3rd rack travel in: 4.00

Speed rpm : 1075...1105
4th rack travel in: 1240
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 13...21

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 7.1

Testing:

Speed rpm : 100

Minimum rack travel: 19.50

Speed rpm : 325

Rack travel in mm : 7.50...7.70

Rack travel in mm : 2.00

Speed rpm : 410...470

TORQUE CONTROL

Dimension a mm : 0.50

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 10.00...10.10

2nd speed rpm : 500

Rack travel in m: 10.50...10.60

4th speed rpm : 855

Rack travel in m: 10.20...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750

Del.quantity cm³/ : 59.0...61.0

1000 s: (56.5...63.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 135.0...145.0

1000 s: (132.0...148.0)

Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Tractor (tractor engines)

D21

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 36
 Edition : 07.04.89
 Replaces : 5.8.88
 Test oil : ISO-4113
 Combination no. : 0 400 863 015
 Injection pump
 Pump designation : PES3A85D410/3RS2642
 EP type number : 0 410 883 989
 Governor
 Governor design. : RSV325...1200A2C2102
 -3L
 Governor no. : 0 420 232 508

Customer-spec. information
 Customer : KHD

Engine : F3L913

1st version kW : 44.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 2

Phasing : 0-120-240
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.30...10.40

Del. quantity cm³/ : 6.8...6.9
 100 s: (6.6...7.1)

Spread cm³ : 0.3
 100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 7.9...8.1
 Del. quantity cm³/ : 0.9...1.6
 100 s: (0.7...1.8)
 Spread cm³ : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del. quantity : 68.5...69.5
 1000 : (66.5...71.5)
 Spread cm³ : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 39...47

Testing:
 1st rack travel in: 9.30
 Speed rpm : 1240...1250
 2nd rack travel in: 4.00
 Speed rpm : 1275...1305
 3rd rack travel in: 4.00

Speed rpm : 1295...1325
4th rack travel in: 1460
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 11...19
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.90...8.10
Rack travel in mm : 2.00
Speed rpm : 440...500

TORQUE CONTROL

Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 10.30...10.40
2nd speed rpm : 500
Rack travel in m: 10.70...10.90
4th speed rpm : 875
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 59.0...61.0
1000 s: (56.5...63.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...150.0
1000 s: (137.0...153.0)
Rack travel in mm : 19.50...21.00

Remarks:

: FENDT

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 d 2
 Edition : 21.04.89
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 400 864 061

Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV325...1150A2C707-1L
 Governor no. : 0 420 232 438

Customer-spec. information
 Customer : KHD

Engine : BF4L913

1st version kW : 67.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

D24

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 8.1...8.2
 100 s : (7.9...8.4)

Spread cm³ : 0.3
 100 s : (0.4)

2nd speed rpm : 325.0
 Rack travel in mm : 8.1...8.3
 Del. quantity cm³/ : 1.0...1.6
 100 s : (0.8...1.8)

Spread cm³ : 0.2
 100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Aneroid pressure h: 700
 Del. quantity : 81.5...82.5
 1000 : (79.5...84.5)

Spread cm³ : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 38...46

Testing:
 1st rack travel in: 11.70
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00
 Speed rpm : 1110...1140

3rd rack travel in: 4.00
Speed rpm : 1175...1205
4th rack travel in: 1340
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 8.10...8.30
Rack travel in mm : 2.00
Speed rpm : 640...700

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.70...12.80
2nd speed rpm : 500
Rack travel in m: 13.70...13.80
3rd speed rpm : 800
Rack travel in m: 13.40...13.60
4th speed rpm : 900
Rack travel in m: 12.90...13.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.70...13.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.10...12.20
2nd pressure hPa : 450
Rack travel in m: 13.30...13.40
3rd pressure hPa : 290
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 800
Del.quantity cm3/ : 86.5...88.5
1000 s: (84.0...91.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/ : 61.5...63.5
1000 s: (59.5...65.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 17.10...17.30

Remarks:

Test electrically-released starting
quantity (EES) with 12 volts

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 d 1
 Edition : 21.04.89
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 400 864 062

Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV325...1150A2C707-
 2L
 Governor no. : 0 420 232 439

Customer-spec. information
 Customer : KHD

Engine : BF4L913

1st version kW : 67.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.70...12.80

Del.quantity cm3/ : 8.1...8.2
 100 s: (7.9...8.4)

Spread cm3 : 0.3
 100 s: (0.4)

2nd speed rpm : 325.0
 Rack travel in mm : 8.1...8.3
 Del.quantity cm3/ : 1.0...1.6
 100 s: (0.8...1.8)

Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Aneroid pressure h: 700
 Del.quantity : 81.5...82.5
 1000 : (79.5...84.5)

Spread cm3 : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 38...46

Testing:
 1st rack travel in: 11.70
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00
 Speed rpm : 1110...1140

3rd rack travel in: 4.00
Speed rpm : 1175...1205
4th rack travel in: 1340
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 8.10...8.30
Rack travel in mm : 2.00
Speed rpm : 640...700

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.70...12.80
2nd speed rpm : 500
Rack travel in m: 13.70...13.80
3rd speed rpm : 800
Rack travel in m: 13.40...13.60
4th speed rpm : 900
Rack travel in m: 12.90...13.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.70...13.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.10...12.20
2nd pressure hPa : 450
Rack travel in m: 13.30...13.40
3rd pressure hPa : 290
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 800
Del.quantity cm3/ : 86.5...88.5
1000 s: (84.0...91.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/ : 61.5...63.5
1000 s: (59.5...65.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 17.10...17.30

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 d
 Edition : 29.03.89
 Replaces : 10.8.87
 Test oil : ISO-4113

Combination no. : 0 400 864 063

Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV325...1400A8C707-
 3L
 Governor no. : 0 420 232 440

Customer-spec. information
 Customer : KHD

Engine : BF4L913

1st version kW : 78.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.70...12.80

Del. quantity cm³/ : 8.2...8.3
 100 s : (8.0...8.5)

Spread cm³ : 0.3
 100 s : (0.4)

2nd speed rpm : 325.0
 Rack travel in mm : 8.4...8.6
 Del. quantity cm³/ : 0.8...1.4
 100 s : (0.6...1.6)

Spread cm³ : 0.2
 100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Aneroid pressure h: 700
 Del. quantity : 82.5...83.5
 1000 : (80.5...85.5)

Spread cm³ : 3.00
 1000 : (4.50)

RATED SPEED

1st version
 Control lever
 position degrees: 49...57

Testing:
 1st rack travel in: 11.70
 Speed rpm : 1290...1300
 2nd rack travel in: 4.00
 Speed rpm : 1315...1345

3rd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1540
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 9...17
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 8.0
Speed rpm : 325
Rack travel in mm : 8.40...8.60
Rack travel in mm : 2.00
Speed rpm : 620...680

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 12.70...12.80
2nd speed rpm : 500
Rack travel in m: 13.70...13.80
3rd speed rpm : 850
Rack travel in m: 13.50...13.60
4th speed rpm : 950
Rack travel in m: 13.20...13.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.70...13.80

Measurement

Speed 1/min : 500
1st pressure hPa : -
Rack travel in m: 12.50...12.60
2nd pressure hPa : 390
Rack travel in m: 13.50...13.60
3rd pressure hPa : 250
Rack travel in m: 12.80...13.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 850
Del.quantity cm3/ : 84.5...86.5
1000 s: (82.0...89.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 59.5...61.5
1000 s: (57.5...63.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...110.0
1000 s: (97.0...113.0)
Rack travel in mm : 17.10...17.50

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 d 5
 Edition : 07.04.89
 Replaces : 9.3.87
 Test oil : ISO-4113
 Combination no. : 0 400 864 068
 Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV325...900A8C602-3
 L
 Governor no. : 0 420 232 460

Customer-spec. information
 Customer : KHD

Engine : BF4L913

1st version kW : 64.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

E02

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.50...13.60

Del.quantity cm3/ : 8.3...8.4

100 s: (8.1...8.6)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 8.4...8.6

Del.quantity cm3/ : 0.8...1.4

100 s: (0.6...1.6)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 83.0...84.0

1000 : (81.0...86.0)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 31...39

Testing:

1st rack travel in: 12.50

Speed rpm : 890...900

2nd rack travel in: 4.00

Speed rpm : 955...985

4th rack travel in: 1030

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 12...20

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 8.5

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 325

Rack travel in mm : 8.40...8.60

Rack travel in mm : 2.00

Speed rpm : 365...425

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 850

Rack travel in m: 13.50...13.60

2nd speed rpm : 500

Rack travel in m: 13.50...13.70

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.50

Speed rpm : 890...900

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 125.0...135.0

1000 s: (122.0...138.0)

Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 37
 Edition : 24.05.89
 Replaces : 5.8.88
 Test oil : ISO-4113

Combination no. : 0 400 864 072

Injection pump
 Pump designation : PES4A85D410/3RS2610
 EP type number : 0 410 884 951
 Governor
 Governor design. : RSV325...1200A2C2102
 -3L
 Governor no. : 0 420 232 508

Customer-spec. information
 Customer : KHD

Engine : F4L913

1st version kW : 59.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

E04

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.30...10.40

Del.quantity cm3/ : 6.8...6.9

100 s: (6.6...7.1)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 7.6...7.8

Del.quantity cm3/ : 0.7...1.3

100 s: (0.5...1.5)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 68.5...69.5

1000 : (66.5...71.5)

Spread cm3 : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 45...53

Testing:

1st rack travel in: 9.30

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1290...1320

3rd rack travel in: 4.00

Speed rpm : 1305...1335
4th rack travel in: 1475
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 6.60...6.80
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 10.30...10.40
2nd speed rpm : 750
Rack travel in m: 10.70...10.80
4th speed rpm : 835
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 59.5...61.5
1000 s: (57.0...64.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...150.0
1000 s: (137.0...153.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Tractor (tractor engines)

E05

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 43
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 864 074
 Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV325..1150AOC2168-
 4L
 Governor no. : 0 420 232 524

Customer-spec. information
 Customer : KHD

Engine : BF4L913T

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.50...2.60
 : (2.45...2.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 10.90...11.00
 Del.quantity cm3/ : 6.8...6.9
 100 s: (6.6...7.1)
 Spread cm3 : 0.3
 100 s: (0.5)
 2nd speed rpm : 325.0
 Rack travel in mm : 8.8...9.0
 Del.quantity cm3/ : 1.6...2.2
 100 s: (1.4...2.4)
 Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 68.0...69.0
 1000 : (66.0...71.0)
 Spread cm3 : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 49...57

Testing:

1st rack travel in: 9.90
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1255...1285
 3rd rack travel in: 4.00
 Speed rpm : 1325...1355
 4th rack travel in: 1490
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 25...33

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 8.4

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 325

Rack travel in mm : 8.80...9.00

Rack travel in mm : 2.00

Speed rpm : 730...790

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 10.90...11.00

2nd speed rpm : 500

Rack travel in m: 12.20...12.30

3rd speed rpm : 960

Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del.quantity cm3/ : 60.0...63.0

1000 s: (57.5...65.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.90

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 130.0...140.0

1000 s: (127.0...143.0)

Rack travel in mm : 19.50...21.00

Remarks:

: DX 3 X

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 6,2 e 4
 Edition : 21.04.89
 Replaces : 9.10.87
 Test oil : ISO-4113

Combination no. : 0 400 866 112

Injection pump
 Pump designation : PES6A90D320/3RS2660
 EP type number : 0 410 896 078
 Governor
 Governor design. : RSV325...1500A2C505-2R
 Governor no. : 0 420 233 196

Customer-spec. information
 Customer : MWM

Engine : D226-6

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

E08

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference, CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1500

Rack travel in mm : 11.20...11.30

Del.quantity cm3/ : 8.9...9.0

100 s: (8.7...9.2)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.0...7.2

Del.quantity cm3/ : 0.8...1.4

100 s: (0.6...1.6)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1500

Del.quantity : 89.5...90.5

1000 : (87.5...92.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 59...67

Testing:

1st rack travel in: 10.20

Speed rpm : 1540...1550

2nd rack travel in: 4.00
Speed rpm : 1590...1620
3rd rack travel in: 4.00
Speed rpm : 1605...1635
4th rack travel in: 1780
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.00...7.20
Rack travel in mm : 2.00
Speed rpm : 450...510

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.20
Speed rpm : 1540...1550

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 24
 Edition : 28.04.89
 Replaces : 7.2.89
 Test oil : ISO-4113
 Combination no. : 0 400 866 118
 Injection pump
 Pump designation : PES6A85D410/3RS2611
 EP type number : 0 410 886 902
 Governor
 Governor design. : RSV325...1150A8C604L
 Governor no. : 0 420 232 319

Customer-spec. information
 Customer : KHD

Engine : F6L913

1st version kw : 78.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00

E10

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.20...10.30

Del.quantity cm3/ : 6.0...6.1

100 s: (5.8...6.3)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 8.4...8.6

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 60.5...61.5

1000 : (58.5...63.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 49...57

Testing:

1st rack travel in: 9.20

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1215...1245

3rd rack travel in: 4.00

Speed rpm : 1240...1270

4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 8.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 8.40...8.60
Rack travel in mm : 2.00
Speed rpm : 440...500

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.20...10.30
2nd speed rpm : 500
Rack travel in m: 10.20...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm3/ : 39.5...41.5
1000 s: (37.0...44.0)
Speed rpm : 800
Del.quantity cm3/ : 48.0...50.0
1000 s: (45.5...52.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...145.0
1000 s: (132.0...148.0)
Rack travel in mm : 19.50...21.00

Remarks:

: STEINBOCK

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 r 2
 Edition : 21.04.89
 Replaces : 28.11.88
 Test oil : ISO-4113
 Combination no. : 0 400 866 127
 Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RSV325...1150A8C707-5L
 Governor no. : 0 420 232 517

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 112.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 8.4...8.5

100 s: (8.2...8.7)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.5...7.7

Del.quantity cm3/ : 0.8...1.4

100 s: (0.6...1.6)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 84.5...85.5

1000 : (82.5...87.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 11.10

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

3rd rack travel in: 4.00
Speed rpm : 1290...1320
4th rack travel in: 1455
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.50...7.70
Rack travel in mm : 2.00
Speed rpm : 600...660

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.10...12.20
2nd speed rpm : 500
Rack travel in m: 12.60...12.70
3rd speed rpm : 855
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.50...11.60

Measurement

Speed 1/min : 500

1st pressure hPa : 350
Rack travel in m: 11.90...12.00
3rd pressure hPa : 700
Rack travel in m: 12.60...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del.quantity cm3/ : 87.0...89.0
1000 s: (84.5...91.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 64.5...65.5
1000 s: (62.5...67.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 17.00...17.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L
Edition : 07.04.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 866 128

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV410...950A0C2190-
26R
Governor no. : 0 420 233 224

Customer-spec. information
Customer : C.D.C.

Engine : 6 CT

1st version kW : 138.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

E14

Prestroke mm : 2.80...2.90
: (2.75...3.00)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 9.60...9.70

Del.quantity cm3/ : 8.4...8.6

100 s: (8.2...8.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 410.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 950

Del.quantity : 84.5...86.5

1000 : (82.5...88.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 8.60
Speed rpm : 1010...1020
2nd rack travel in: 4.00
Speed rpm : 1050...1080
4th rack travel in: 1150
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 410
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 410
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 455...515

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 950
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 99.0...103.0
1000 s: (97.0...105.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.60
Speed rpm : 1010...1020

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 410
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: C.D.C. # 3914771

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark at 10, cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L 1
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 866 129

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV400...1050A0C2190
-27R
Governor no. : 0 420 233 225

Customer-spec. information
Customer : C.D.C.

Engine : 6CT 8.3

1st version kW : 111.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

E16

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.70...9.80

Del.quantity cm3/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 1.1...1.5

100 s: (0.9...1.8)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 85.0...87.0

1000 : (83.0...89.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 8.70
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1205...1235
3rd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 30...38
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.30...5.50
Rack travel in mm : 2.00
Speed rpm : 470...530

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.70...9.80
2nd speed rpm : 750
Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 94.0...98.0
1000 s: (92.0...100.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.70
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.30...5.50

E17

Del.quantity cm3/ : 11.5...15.5
1000 s: (9.0...18.0)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3912534

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 l 4
 Edition : 02.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 1290B
 Injection pump
 Pump designation : PES6A100D320/3RS2763
 EP type number : 0 410 806 006
 Governor
 Governor design. : RSV400..1200AOC2190
 Governor no. : 0 420 233

Customer-spec. information
 Customer : C.D.C

Engine : 6 CT

1st version kW : 101.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...3.00)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.00...10.10

Del.quantity cm3/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.4...5.6

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 87.5...89.5

1000 : (85.5...91.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 54...62

Testing:

1st rack travel in: 9.00

Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1315...1345
4th rack travel in: 1400
Speed rpm : 0.30...0.70

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 505...565

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 10.00...10.10
2nd speed rpm : 800
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 87.5...91.5
1000 s: (85.5...93.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:
Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L 5
 Edition : 02.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 1290C
 Injection pump
 Pump designation : PES6A100D320/3RS2763
 EP type number : 0 410 806 006
 Governor
 Governor design. : RSV425..1100A0C2190

Customer-spec. information
 Customer : C.D.C

Engine : 6 CT

1st version kW : 127.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve
 : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values.
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...3.00)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.20...10.30

Del.quantity cm3/ : 9.3...9.5

100 s: (9.1...9.7)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 93.5...95.5

1000 : (91.5...97.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 45...53

Testing:

1st rack travel in: 9.20

Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1250
Speed rpm : 0.30...0.70

LOW IDLE 1

Control lever
position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 505...565

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 120.0...124.0
1000 s: (118.0...126.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 m
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 866 131

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV425...900A4C2213-
2R
Governor no. : 0 420 233 230

Customer-spec. information
Customer : C.D.C.

Engine : 6 CT 8.3

1st version kW : 154.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

E22

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 830

Rack travel in mm : 13.40...13.50

Del.quantity cm3/ : 13.5...13.7

100 s: (13.3...13.9)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.2...1.6

100 s: (0.9...1.8)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 830

Del.quantity : 135.0...137.0

1000 : (133.0...139.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 12.40
Speed rpm : 925...935
2nd rack travel in: 4.00
Speed rpm : 960...990
4th rack travel in: 1030
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 425
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 435...495

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 925...935

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.10...5.30
Del.quantity cm3/ : 12.0...16.0
1000 s: (9.5...18.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:
: C.D.C. # 3914869

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark at 10, cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a63
Edition : 02.05.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 132

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV500...1250A0C2190
-28R
Governor no. : 0 420 233 231

Customer-spec. information
Customer : C.D.C.

Engine : 6 CT-I 8.3ltr.

1st version kW : 139.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 500.0

Rack travel in mm : 5.5...5.7

Del.quantity cm3/ : 1.3...1.7

100 s: (1.0...1.9)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 101.5...103.5

1000 : (99.5...105.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 10.40
Speed rpm : 1305...1315
2nd rack travel in: 4.00
Speed rpm : 1350...1380
4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 500
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 500
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 525...585

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1305...1315

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 500
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915687

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a64
Edition : 02.05.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 866 132LA
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1050AOC2190

Customer-spec. information
Customer : C.D.C.

Engine : 6 C 8.3

1st version kW : 174.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.90...13.00

Del.quantity cm³/ : 12.9...13.1

100 s: (12.7...13.3)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 129.0...131.0

1000 : (127.0...133.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 37...45

Testing:

1st rack travel in: 11.90

Speed rpm : 1095...1105

2nd rack travel in: 4.00

Speed rpm : 1170...1200

4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 440...500

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1095...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a65
Edition : 02.05.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 133

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV500...1250A0C2190
-29R
Governor no. : 0 420 233 232

Customer-spec. information
Customer : C.D.C.

Engine : 6 CTA-I

1st version kW : 164.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

E28

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.90...12.00

Del.quantity cm3/ : 11.3...11.5

100 s: (11.1...11.7)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 500.0

Rack travel in mm : 5.6...5.8

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 113.0...115.0

1000 : (111.0...117.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 41...49

Testing:

1st rack travel in: 10.90
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1320...1350

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 500
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 500
Rack travel in mm : 5.60...5.80
Rack travel in mm : 2.00
Speed rpm : 510...570

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.90
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 500
Rack travel in mm : 5.60...5.80
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915690

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 12, cam angle
after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a15
Edition : 07.04.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 866 134

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100AOC2190
-31R
Governor no. : 0 420 233 233

Customer-spec. information
Customer : C.D.C.

Engine : 6 CT 8.3

1st version kW : 156.6
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

FQ2

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 12.2...12.4

100 s : (12.0...12.6)

Spread cm3 : 0.3

100 s : (0.6)

2nd speed rpm : 400.0
Rack travel in mm : 5.6...5.8
Del.quantity cm3/ : 1.6...2.0
100 s : (1.3...2.2)

Spread cm3 : 0.3
100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del.quantity : 122.5...124.5
1000 : (120.5...126.5)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:

1st rack travel in: 11.30
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 28...36
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.2

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.60...5.80
Rack travel in mm : 2.00
Speed rpm : 485...545

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.30
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.60...5.80
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:
: C.D.C. # 3915978

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark at 10, cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a16
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 866 135

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV500...1050A0C2190
-30R
Governor no. : 0 420 233 234

Customer-spec. information
Customer : C.D.C.

Engine : 6-CT-I 8.3 ltr

1st version kW : 123.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

F04

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 500.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 96.5...98.5

1000 : (94.5...100.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 9.70
Speed rpm : 1095...1105
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 31...39
Setting point w/out bumper spring
Speed rpm : 500
Rack travel in mm : 4.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 500
Rack travel in mm : 5.30...5.50
Rack travel in mm : 2.00
Speed rpm : 570...630

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 10.70...10.80
2nd speed rpm : 750
Rack travel in m: 12.10...12.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 116.0...120.0
1000 s: (114.0...122.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1095...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 500
Rack travel in mm : 5.30...5.50
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

F05

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915992

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 o 2
 Edition : 21.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 136
 Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RSV325...1400A2C661-
 1L
 Governor no. : 0 420 232 516
 Customer-spec. information
 Customer : KHD
 Engine : BF6L913
 1st version kW : 112.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200
 Rack travel in mm : 11.90...12.00
 Del.quantity cm3/ : 8.2...8.3
 100 s: (8.0...8.5)
 Spread cm3 : 0.3
 100 s: (0.5)
 2nd speed rpm : 325.0
 Rack travel in mm : 7.4...7.6
 Del.quantity cm3/ : 0.8...1.4
 100 s: (0.6...1.6)
 Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del.quantity : 82.5...83.5
 1000 : (80.5...85.5)
 Spread cm3 : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 43...51

Testing:
 1st rack travel in: 10.90
 Speed rpm : 1240...1250
 2nd rack travel in: 4.00
 Speed rpm : 1285...1315
 3rd rack travel in: 4.00

Speed rpm : 1345...1375
4th rack travel in: 1510
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 7.40...7.60
Rack travel in mm : 2.00
Speed rpm : 605...665

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 11.90...12.00
2nd speed rpm : 500
Rack travel in m: 12.70...12.80
3rd speed rpm : 980
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 85.0...87.0
1000 s: (82.5...89.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 17.00...17.40

Remarks:

:

APPLICATION

Excavator

F07

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 m 1
Edition : 07.04.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 866 138

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV425...750A4C2213-3R
Governor no. : 0 420 233 235

Customer-spec. information
Customer : C.D.C.

Engine : 6CT- 8.3 L

1st version kW : 135.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

F08

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 14.00...14.10

Del.quantity cm3/ : 14.2...14.4

100 s: (14.0...14.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 6.0...6.2

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-Lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 142.5...144.5

1000 : (140.5...146.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 36...44

Testing:

1st rack travel in: 13.00

Speed rpm : 795...805

2nd rack travel in: 4.00

Speed rpm : 825...855
3rd rack travel in: 4.00
Speed rpm : 830...860

LOW IDLE 1

Control lever
position degrees: 26...34
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 425
Rack travel in mm : 6.00...6.20
Rack travel in mm : 2.00
Speed rpm : 430...490

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.00
Speed rpm : 795...805

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 425
Rack travel in mm : 6.00...6.20
Del.quantity cm3/ : 18.0...22.0
1000 s: (15.5...24.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:
: C.D.C. # 3914870

Start-of-delivery mark at 10, cam
rotation angle after start of delivery,
cylinder 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L 2
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 866 139

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV400...1250A0C2190
-39R
Governor no. : 0 420 233 245

Customer-spec. information
Customer : CDC

Engine : 6 CT 8.3 ltr

1st version kW : 114.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 457 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.40...9.50

Del.quantity cm3/ : 8.6...8.8

100 s: (8.4...9.0)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.4...5.6

Del.quantity cm3/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 86.0...88.0

1000 : (84.0...90.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 54...62

Testing:

1st rack travel in: 8.40

Speed rpm : 1310...1320

2nd rack travel in: 4.00

Speed rpm : 1355...1385
4th rack travel in: 1450
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 28...36
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 490...550

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.40...9.50
2nd speed rpm : 750
Rack travel in m: 9.90...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 84.5...88.5
1000 s: (82.5...90.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40
Speed rpm : 1310...1320

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 145.0...165.0
1000 s: (140.0...170.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 19.0...23.0
1000 s: (16.5...25.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3914764

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a66
Edition : 07.04.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 140

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A0C2190
-33R

Governer no. : 0 420 233 237

Customer-spec. information
Customer : C.D.C.

Engine : 6 CTA 8.3ltr

1st version kW : 174.5
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

F12

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.70...12.80

Del.quantity cm3/ : 12.6...12.8

100 s: (12.4...13.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 126.5...128.5

1000 : (124.5...130.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 39...47

Testing:

1st rack travel in: 11.70
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
3rd rack travel in: 4.00
Speed rpm : 1205...1235
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 455...515

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: C.D.C. # 3915967

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 k 3
 Edition : 02.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 141
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1250A0C2216
 -3R
 Governor no. : 0 420 233 238
 Customer-spec. information
 Customer : C.D.C.
 Engine : 6 CT 8.3 ltr
 1st version kW : 160.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 017
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,6
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 12.00...12.10
 Del.quantity cm3/ : 12.1...12.3
 100 s: (11.9...12.5)
 Spread cm3 : 0.4
 100 s: (0.6)
 2nd speed rpm : 400.0
 Rack travel in mm : 5.4...5.6
 Del.quantity cm3/ : 1.7...2.1
 100 s: (1.4...2.3)
 Spread cm3 : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 121.0...123.0
 1000 : (119.0...125.0)
 Spread cm3 : 4.00
 1000 : (6.50)

RATED SPEED

1st version
 Control lever
 position degrees: 50...58

Testing:

1st rack travel in: 11.00
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1355...1385
3rd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1450
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 26...34
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 465...525

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 12.00...12.10
2nd speed rpm : 750
Rack travel in m: 12.20...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 122.5...126.5
1000 s: (120.5...128.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.40...5.60

F15

Del.quantity cm³/ : 17.0...21.0
1000 s: (14.5...23.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915979

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 k 4
 Edition : 02.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 142
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1050AQC2216
 -4
 Governor no. : 0 420 233 239
 Customer-spec. information
 Customer : C.D.C.
 Engine : 6 CT 8.3 ltr
 1st version kW : 131.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C. : 38...42
 Overflow valve : 1 417 413 047
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 017
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,6
 Test lines : 1 680 750 014
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

F16

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050
 Rack travel in mm : 11.10...11.20
 Del.quantity cm3/ : 10.1...10.3
 100 s: (9.9...10.5)
 Spread cm3 : 0.4
 100 s: (0.6)
 2nd speed rpm : 400.0
 Rack travel in mm : 5.5...5.7
 Del.quantity cm3/ : 1.4...1.8
 100 s: (1.1...2.0)
 Spread cm3 : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050
 Del.quantity : 101.5...103.5
 1000 : (99.5...105.5)
 Spread cm3 : 4.00
 1000 : (6.50)

RATED SPEED

1st version
 Control lever
 position degrees: 44...52

Testing:

1st rack travel in: 10.10
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1145...1175
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 480...520

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 11.10...11.20
2nd speed rpm : 750
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 120.0...124.0
1000 s: (118.0...124.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.50...5.70
Del.quantity cm³/ : 14.0...18.0
1000 s: (11.5...20.5)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915980

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 5,9 v
Edition : 24.05.89
Replaces : 10.2.89
Test oil : ISO-4113

Combination no. : 0 400 866 143

Injection pump
Pump designation : PES6A95D120RS2773
EP type number : 0 410 896 904
Governor
Governor design. : RSV350...1250A2C2237
R

Governer no. : 0 420 233 240

Customer-spec. information
Customer : CUMMINS

Engine : 6BT

1st version kW : 118.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.10...2.20
: (2.05...2.25)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.40...9.50

Del.quantity cm3/ : 8.8...9.0

100 s: (8.6...9.3)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 5.4...5.6

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 88.5...90.5

1000 : (86.0...93.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 39...47

Testing:

1st rack travel in: 8.40

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1355...1385
3rd rack travel in: 4.00
Speed rpm : 1365...1395
4th rack travel in: 1530
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 465...525

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.40...9.50
2nd speed rpm : 500
Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm³/ : 77.0...80.0
1000 s: (75.0...82.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.40
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 14.10...14.50

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.40...5.60
Del.quantity cm³/ : 16.0...22.0
1000 s: (13.5...24.5)

Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

Start-of-delivery mark = 12,5, after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a67
Edition : 02.05.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 144

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100AOC2190
-34R
Governor no. : 0 420 233 241

Customer-spec. information
Customer : C.D.C.

Engine : 6 CTA 8.3 ltr.

1st version kW : 157.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

F20

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 11.1...11.3

100 s: (10.9...11.5)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 6.0...6.5

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 111.0...113.0

1000 : (109.0...115.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 11.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 21...29
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 6.00...6.50
Rack travel in mm : 2.00
Speed rpm : 460...520

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.00...12.10
2nd speed rpm : 750
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 130.5...134.5
1000 s: (128.5...136.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.00...6.50
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915956

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a68
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 145
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1100AOC2190
 -35R
 Governor no. : 0 420 233 242

Customer-spec. information
 Customer : C.D.C.

Engine : 6 C 8.3 ltr.

1st version kW : 112.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.30...11.40

Del.quantity cm3/ : 10.5...10.7

100 s: (10.3...10.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 105.5...107.5

1000 : (103.5...109.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 10.30
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1195...1225
3rd rack travel in: 4.00
Speed rpm : 1205...1235
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 475...535

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: C.D.C. # 3915955

Start-of-delivery mark 11, cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a69
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 146
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1100AOC2190
 -36R
 Governor no. : 0 420 233 243

Customer-spec. information
 Customer : C.D.C.

Engine : 6 CT 8.3

1st version kW : 138.0
 2nd version kW : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

F24

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 10.6...10.8

100 s: (10.4...11.0)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 750.0

Rack travel in mm : 12.6...12.8

Del.quantity cm3/ : 12.5...12.9

100 s: (12.3...13.1)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 106.5...108.5

1000 : (104.5...110.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 49...57

Testing:

1st rack travel in: 10.40
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 27...35
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 520...580

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.40...11.50
2nd speed rpm : 750
Rack travel in m: 12.60...12.80

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.40
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915952

Adjust stop lever to 0.5...1.0 mm
before stop.

F25

Snow plough

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L 6
Edition : 07.04.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 866 147
Injection pump
Pump designation : PES6A1000320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV425..1100A0C2190-37R
Governor no. : 0 420 233 244

Customer-spec. information
Customer : C.D.C

Engine : 6 CT

1st version kW : 127.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

F26

Prestroke mm : 2.80...2.90
: (2.75...3.00)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.20...10.30

Del.quantity cm3/ : 9.3...9.5

100 s: (9.1...9.7)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.6...2.0
100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 93.5...95.5

1000 : (91.5...97.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 45...53

Testing:

1st rack travel in: 9.20
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1250
Speed rpm : 0.30...0.70

LOW IDLE 1

Control lever
position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 425
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 505...565

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 120.0...124.0
1000 s: (118.0...126.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

F27

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 b 1
 Edition : 21.04.89
 Replaces : 25.3.88
 Test oil : ISO-4113
 Combination no. : 0 400 874 246
 Injection pump
 Pump designation : PES4A90D410RS2666
 EP type number : 0 410 894 029
 Governor
 Governor design. : RSV350...1250ADC2006
 -5L
 Governor no. : 0 420 232 497

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM364

1st version kW : 63.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 6.2...6.3

100 s: (6.0...6.5)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 350.0

Rack travel in mm : 8.2...8.8

Del.quantity cm3/ : 1.0...1.2

100 s: (0.8...1.4)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1230

Del.quantity : 62.0...63.0

1000 : (60.0...65.0)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 55...63

Testing:

1st rack travel in: 9.70

Speed rpm : 1270...1280

2nd rack travel in: 4.00

Speed rpm : 1350...1380

4th rack travel in: 1520

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 31...39

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 8.5

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 350

Rack travel in mm : 8.40...8.60

Rack travel in mm : 2.00

Speed rpm : 510...570

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1230

Rack travel in m: 10.70...10.80

2nd speed rpm : 500

Rack travel in m: 12.00...12.10

3rd speed rpm : 800

Rack travel in m: 11.50...11.70

4th speed rpm : 1000

Rack travel in m: 11.00...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del.quantity cm3/ : 54.0...56.0

1000 s: (51.5...58.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70

Speed rpm : 1270...1280

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 78.0...88.0

1000 s: (75.0...91.0)

Rack travel in mm : 16.50...16.90

LOW IDLE

Speed rpm : 350

Rack travel in mm : 8.20...8.80

G01

Del.quantity cm3/ : 10.0...12.0

1000 s: (8.0...14.0)

Spread

cm3 : 2.50

1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 o 5
Edition : 02.06.89
Replaces : 9.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 195

Injection pump
Pump designation : PES6A90D410RS2293Z
EP type number : 0 410 896 037
Governor
Governor design. : RSV750...1250A1C318-1L

Governer no. : 0 420 232 407

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM352A

1st version kW : 107.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
: (2.10...2.30)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 11.20...11.30

Del.quantity cm3/ : 7.4...7.5

100 s: (7.2...7.7)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 750.0

Rack travel in mm : 5.5...5.7

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1230

Del.quantity : 74.5...75.5

1000 : (72.5...77.5)

Spread cm3 : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 61...69

Testing:

1st rack travel in: 10.20

Speed rpm : 1260...1270

2nd rack travel in: 4.00

Speed rpm : 1295...1315

4th rack travel in: 1350

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 36...44

Setting point w/out bumper spring

Speed rpm : 750

Rack travel in mm : 5.6

Speed rpm : 750

Rack travel in mm : 5.50...5.70

Rack travel in mm : 2.00

Speed rpm : 760...790

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 78.0...88.0

1000 s: (75.0...91.0)

Remarks:

:

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 o 3
 Edition : 16.06.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 305
 Injection pump
 Pump designation : PES6A95D410RS2625
 EP type number : 0 410 896 926
 Governor
 Governor design. : RSV325...1150A8C674L
 Governor no. : 0 420 232 331

Customer-spec. information
 Customer : KHD

Engine : BF6L913B

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C. : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 8.0...8.2

100 s: (7.8...8.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 325.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 80.0...82.0

1000 : (78.0...84.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 46...54

Testing:

1st rack travel in: 10.40

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1205...1235

3rd rack travel in: 4.00

Speed rpm : 1265...1295

4th rack travel in: 1430

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 61...69
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.8
Speed rpm : 325
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 585...645

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.40...11.50
2nd speed rpm : 500
Rack travel in m: 12.10...12.20
3rd speed rpm : 1000
Rack travel in m: 11.80...12.00

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 12.20...12.30

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 11.10...11.20

2nd pressure hPa : 355

Rack travel in m: 11.90...12.00

3rd pressure hPa : 200

Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 800

Del.quantity cm3/ : 83.0...86.0

1000 s: (80.5...88.5)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 56.5...59.5

1000 s: (54.5...61.5)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

G05

1mm rack travel less than

full load rack tr: 10.40

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 116.5...126.5

1000 s: (113.5...129.5)

Rack travel in mm : 15.90...16.40

Remarks:

:

APPLICATION

Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 3
 Edition : 29.03.89
 Replaces : 13.5.87
 Test oil : ISO-4113

Combination no. : 0 400 876 327

Injection pump
 Pump designation : PES6A95D320RS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300ADC2195
 R
 Governor no. : 0 420 233 200

Customer-spec. information
 Customer : DAF

Engine : DNT 620

1st version kW : 130.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

G06

Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference, CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.50...11.60

Del.quantity cm3/ : 7.7...7.8

100 s: (7.5...8.0)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 300.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del.quantity : 77.5...78.5

1000 : (75.5...80.5)

Spread cm3 : 3.50

1000 : (4.50)

RATED SPEED

1st version

Control lever
position degrees: 58...66

Testing:

1st rack travel in: 9.70
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1400...1430
3rd rack travel in: 4.00
Speed rpm : 1425...1455
4th rack travel in: 1570
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 27...35
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0
Speed rpm : 300
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 595...655

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 10.70...10.80
2nd speed rpm : 500
Rack travel in m: 11.50...11.60
4th speed rpm : 1050
Rack travel in m: 10.90...11.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.50...11.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.20...11.40
2nd pressure hPa : 250
Rack travel in m: 11.40...11.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1290
Del.quantity cm3/ : 72.0...74.0
1000 s: (69.5...76.5)
Aneroid pressure h: -

Speed rpm : 600
Del.quantity cm3/ : 65.5...66.5
1000 s: (63.5...68.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.40...6.60
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 2
 Edition : 29.03.89
 Replaces : 9.3.87
 Test oil : ISO-4113

Combination no. : 0 400 876 332

Injection pump
 Pump designation : PES6A95D320RS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300AOC2206
 R
 Governor no. : 0 420 233 204

Customer-spec. information
 Customer : DAF

Engine : DNTD 620

1st version kW : 110.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

G08

Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference, CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 10.80...10.90

Del. quantity cm3/ : 6.6...6.8

100 s: (6.4...7.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.5

Del. quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del. quantity : 66.0...68.0

1000 : (64.0...70.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.20
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1400...1430
3rd rack travel in: 4.00
Speed rpm : 1425...1455
4th rack travel in: 1570
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 76...84
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 10.20...10.40
2nd speed rpm : 500
Rack travel in m: 10.80...10.90
4th speed rpm : 1005
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1290
Del.quantity cm3/ : 70.0...72.0
1000 s: (67.5...74.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 1
 Edition : 29.03.89
 Replaces : 28.6.88
 Test oil : ISO-4113
 Combination no. : 0 400 876 333
 Injection pump
 Pump designation : PES6A95D32ORS2693Z
 EP type number : 0 410 896 913
 Governor
 Governor design. : RSV300...1300AOC2195
 R
 Governor no. : 0 420 233 200

Customer-spec. information
 Customer : DAF

Engine : DNS 620

1st version kW : 150.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

G10

Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference, CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.20...12.30

Del.quantity cm3/ : 8.8...9.0

100 s: (8.6...9.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del.quantity : 88.0...90.0

1000 : (86.0...92.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control Lever
position degrees: 54...62

Testing:

1st rack travel in: 10.70
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1410...1440
3rd rack travel in: 4.00
Speed rpm : 1430...1460
4th rack travel in: 1595
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 570...630

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 11.70...11.90
2nd speed rpm : 500
Rack travel in m: 12.20...12.30
4th speed rpm : 1020
Rack travel in m: 11.90...12.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 12.20...12.30

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.20...11.40
2nd pressure hPa : 290
Rack travel in m: 12.00...12.10
3rd pressure hPa : 250
Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1290
Del.quantity cm3/ : 86.0...88.0
1000 s: (83.5...90.5)
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 65.0...67.0
1000 s: (63.0...69.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 w
Edition : 07.04.89
Replaces : 30.9.88
Test oil : ISO-4113

Combination no. : 0 400 876 345

Injection pump
Pump designation : PES6A100D410RS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV400...1100A2C2229

Governer no. : 0 420 232 492

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076 TF

1st version kW : 142.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

G12

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 12.0...12.2

100 s: (11.8...12.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del.quantity : 120.0...122.0
1000 : (118.0...124.0)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 40...48

Testing:

1st rack travel in: 11.00
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 550...610

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.00...12.10
2nd speed rpm : 700
Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 151.0...154.0
1000 s: (148.5...156.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (125.0...155.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 19.0...23.0
1000 s: (16.5...25.5)

Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE # RE32036
Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 h11
Edition : 07.04.89
Replaces : 15.6.88
Test oil : ISO-4113
Combination no. : 0 400 876 347
Injection pump
Pump designation : PES6A100D410RS2676
EP type number : 9 410 230 023
Governor
Governor design. : RSV600...1100A2C2161
-5L
Governor no. : 0 420 232 495

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466AZ-02

1st version kW : 130.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
: (2.40...2.60)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.10...10.20

Del.quantity cm3/ : 11.1...11.3

100 s: (10.9...11.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 600.0
Rack travel in mm : 4.2...4.4
Del.quantity cm3/ : 1.1...1.5
100 s: (0.8...1.7)

Spread cm3 : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del.quantity : 111.0...113.0

1000 : (109.0...115.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 44...52

Testing:
1st rack travel in: 9.10
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1195...1205
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 3.8

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 4.20...4.40
Rack travel in mm : 2.00
Speed rpm : 670...730

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.10...10.20
2nd speed rpm : 950
Rack travel in m: 10.70...10.90

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 95
Rack travel mm : 9.00...9.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.20...8.40
2nd pressure hPa : 145
Rack travel in m: 9.80...10.20
3rd pressure hPa : 700
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 950
Del.quantity cm3/ : 119.0...122.0
1000 s: (116.5...124.5)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 68.0...72.0
1000 s: (66.0...74.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (185.0...215.0)

LOW IDLE

Speed rpm : 600
Rack travel in mm : 4.20...4.40
Del.quantity cm3/ : 11.0...15.0
1000 s: (8.5...17.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE # RE32396

Setting without torque-control spring
retainer with 1 mm control-rod travel
less. Raising of full-load delivery
with torque-control spring retainer to
10.1 mm control-rod travel.

Start-of-delivery mark = 15.5, after
start of delivery cyl. 1.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 x
Edition : 07.04.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 348

Injection pump
Pump designation : PES6A100D41ORS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV400...1100A2C2204
-2L
Governor no. : 9 420 234 177

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 TT

1st version kW : 124.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 10.5...10.7

100 s: (10.3...10.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 3.1...3.5

100 s: (2.8...3.7)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 105.0...107.0

1000 : (103.0...109.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control Lever
position degrees: 43...51

Testing:

1st rack travel in: 10.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 585...645

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.00...11.10
2nd speed rpm : 700
Rack travel in m: 12.20...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 127.5...130.5
1000 s: (125.0...133.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (125.0...155.0)

LOW IDLE

Speed rpm : 400

G17

Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 31.0...35.0
1000 s: (28.5...37.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE # RE29255
Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 5,9 c
Edition : 28.06.89
Replaces : 1.7.88
Test oil : ISO-4113

Combination no. : 0 400 876 349

Injection pump
Pump designation : PES6A90D410RS2757
EP type number : 0 410 896 086
Governor
Governor design. : RSV425...1000A1C2233
L
Governor no. : 0 420 232 496

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8065.25.080

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 9.0...9.1
100 s: (8.8...9.3)

Spread cm3 : 0.3
100 s: (0.5)

2nd speed rpm : 425.0
Rack travel in mm : 7.1...7.3
Del.quantity cm3/ : 1.0...1.6
100 s: (0.8...1.8)

Spread cm3 : 0.2
100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 800
Del.quantity : 90.0...91.0
1000 : (88.0...93.0)

Spread cm3 : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 10.80
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1090...1120
3rd rack travel in: 4.00

Speed rpm : 1140...1170
4th rack travel in: 1240
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 25...33
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 6.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 425
Rack travel in mm : 7.10...7.30
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.80...11.90
2nd speed rpm : 500
Rack travel in m: 11.80...12.00

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 113.0...123.0
1000 s: (110.0...126.0)
Rack travel in mm : 16.50...16.90

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 w 1
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 350

Injection pump
Pump designation : PES6A100D41ORS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV425...1100A2C2234

Governer no. : 0 420 232 498

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076TRW04

1st version kW : 122.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.60...10.70

Del.quantity cm3/ : 10.0...10.2

100 s: (9.8...10.4)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 100.5...102.5

1000 : (98.5...104.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 41...49

Testing:

1st rack travel in: 9.60
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1195...1205
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 555...615

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.60...10.70
2nd speed rpm : 700
Rack travel in m: 11.80...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 125.0...128.0
1000 s: (122.5...130.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 95.0...115.0
1000 s: (90.0...120.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 19.0...23.0
1000 s: (16.5...25.5)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE29182
Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Starting/full-load transition speed
from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 w 2
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 351

Injection pump
Pump designation : PES6A100D410RS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV425...1100A2C2234
-1L
Governor no. : 0 420 232 499

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076 TRWD1

1st version kW : 106.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

G22

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.70...9.80

Del.quantity cm3/ : 8.9...9.1

100 s: (8.7...9.3)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.9...2.3
100 s: (1.6...2.5)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 89.0...91.0

1000 : (87.0...93.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 8.70
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1190...1200
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.70...9.80
2nd speed rpm : 700
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm³/ : 110.5...113.5
1000 s: (108.0...116.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.70
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.10...5.30
Del.quantity cm³/ : 19.0...23.0
1000 s: (16.5...25.5)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE29303
Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 w 3
 Edition : 07.04.89
 Replaces : 20.12.88
 Test oil : ISO-4113
 Combination no. : 0 400 876 352
 Injection pump
 Pump designation : PES6A100D410RS2754
 EP type number : 0 410 806 002
 Governor
 Governor design. : RSV400...1100A2C2204
 -4L
 Governor no. : 0 420 232 500

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6076 ADW-01

1st version kW : 146.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 11.2...11.4

100 s: (11.0...11.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 3.1...3.5

100 s: (2.8...3.7)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 112.0...114.0

1000 : (110.0...116.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 10.60
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1210...1220
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1350
Speed rpm : 0.30...1.40

APPLICATION

Wheel loader

LOW IDLE 1

Control Lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 585...645

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.60...11.70

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (125.0...155.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 31.0...35.0
1000 s: (28.5...37.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE # RE35847

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 w 4
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 354

Injection pump
Pump designation : PES6A100D410RS2754
EP type number : 0 410 806 002
Governor
Governor design. : RSV425...1100A2C2235
L
Governor no. : 0 420 232 511

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076TRW06

1st version kW : 98.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

G26

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.00...9.10

Del.quantity cm3/ : 8.3...8.5

100 s: (8.1...8.7)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 83.5...85.5

1000 : (81.5...87.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 41...49

Testing:

1st rack travel in: 8.00
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1190...1200
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 570...630

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm3/ : 103.0...106.0
1000 s: (100.5...108.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 4.90...5.10
Del.quantity cm3/ : 19.0...23.0
1000 s: (16.5...25.5)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE36069
Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

Setting without torque-control spring
retainer with 1 mm control-rod travel
less. Raising of full-load delivery
with torque-control spring retainer to
9,0 mm control-rod travel.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 w 5
 Edition : 07.04.89
 Replaces : 20.12.88
 Test oil : ISO-4113
 Combination no. : 0 400 876 355
 Injection pump
 Pump designation : PES6A100D410RS2754
 EP type number : 0 410 806 002
 Governor
 Governor design. : RSV425...1100A2C2235
 -1L
 Governor no. : 0 420 232 512

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6076TRW07

1st version kW : 129.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42
 Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 10.5...10.7

100 s: (10.3...10.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 105.0...107.0

1000 : (103.0...109.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control Lever

position degrees: 42...50

Testing:

1st rack travel in: 10.00
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1200...1210
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 570...630

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.00...11.10
2nd speed rpm : 700
Rack travel in m: 12.60...12.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm³/ : 131.5...134.5
1000 s: (129.0...137.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (125.0...155.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 4.90...5.10
Del.quantity cm³/ : 19.0...23.0
1000 s: (16.5...25.5)

H01

Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE # RE36071
Start-of-delivery mark = 12,5, after
start of delivery cyl. 1.

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Starting/full-load transition speed
from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 5
 Edition : 29.03.89
 Replaces : 28.11.88
 Test oil : ISO-4113
 Combination no. : 0 400 876 356
 Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300ADC2195
 -1R
 Governor no. : 0 420 233 222

Customer-spec. information
 Customer : DAF

Engine : DNT 620

1st version kW : 150.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

H02

Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference, CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 7.8...7.9

100 s: (7.6...8.1)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del.quantity : 78.0...79.0

1000 : (76.0...81.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 56...64

Testing:

1st rack travel in: 9.70
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1400...1430
3rd rack travel in: 4.00
Speed rpm : 1420...1450
4th rack travel in: 1590
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 10.70...10.80
2nd speed rpm : 500
Rack travel in m: 11.80...11.90
3rd speed rpm : 980
Rack travel in m: 11.30...11.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : -
Rack travel mm : 11.30...11.50

Measurement

Speed 1/min : 600
1st pressure hPa : 250
Rack travel in m: 11.60...11.70
3rd pressure hPa : 700
Rack travel in m: 11.80...11.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

H03

Speed rpm : 1290
Del.quantity cm3/ : 73.0...75.0
1000 s: (70.5...77.5)
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 65.0...67.0
1000 s: (63.0...69.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d
 Edition : 02.05.89
 Replaces : 20.12.88
 Test oil : ISO-4113
 Combination no. : 0 400 876 357
 Injection pump
 Pump designation : PES6A100D410RS2762
 EP type number : 0 410 806 003
 Governor
 Governor design. : RSV400...1100A2C2229
 L
 Governor no. : 0 420 232 492

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6076 TF

1st version kW : 142.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 101

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

H04

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 12.0...12.2

100 s: (11.8...12.4)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.9...2.3

100 s: (1.6...2.5)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 120.0...122.0

1000 : (118.0...124.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 11.00
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.00...5.20
Rack travel in mm : 2.00
Speed rpm : 550...610

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.00...12.10
2nd speed rpm : 700
Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 151.0...154.0
1000 s: (148.5...156.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 19.0...23.0
1000 s: (16.5...25.5)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE32036
Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d 1
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 359

Injection pump
Pump designation : PES6A100D410RS2762
EP type number : 0 410 806 003
Governor
Governor design. : RSV400...1100A2C2204
-2L
Governor no. : 9 420 234 177

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 TT

1st version kW : 124.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 10.5...10.7

100 s: (10.3...10.9)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 3.1...3.5

100 s: (2.8...3.7)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 105.0...107.0

1000 : (103.0...109.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever
position degrees: 43...51

Testing:

1st rack travel in: 10.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 585...645

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.00...11.10
2nd speed rpm : 700
Rack travel in m: 12.20...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm³/ : 127.5...130.5
1000 s: (125.0...133.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 400

H07

Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 31.0...35.0
1000 s: (28.5...37.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE29255
Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d 2
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 360

Injection pump
Pump designation : PES6A100D410RS2762
EP type number : 0 410 806 003
Governor
Governor design. : RSV425...1100A2C2225
L
Governor no. : 9 420 234 176

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076ARW-06

1st version kW : 146.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness : 6.00X2.00X600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

H08

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 11.4...11.6

100 s: (11.2...11.8)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 900

Del.quantity : 114.0...116.0

1000 : (112.0...118.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:
1st rack travel in: 10.80
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.5

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 570...630

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.80...11.90
2nd speed rpm : 650
Rack travel in m: 13.70...13.90

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.70...13.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.70...11.90
2nd pressure hPa : 535
Rack travel in m: 12.30...12.40
3rd pressure hPa : 720
Rack travel in m: 13.30...13.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 650
Del.quantity cm3/ : 147.5...150.5
1000 s: (145.0...153.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 129.0...133.0
1000 s: (126.0...136.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 4.90...5.10
Del.quantity cm3/ : 18.0...22.0
1000 s: (15.5...24.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:
: JOHN DEERE # RE29298

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d 3
Edition : 02.05.89
Replaces : 20.12.88
Test oil : ISO-4113

Combination no. : 0 400 876 361

Injection pump
Pump designation : PES6A100D410RS2762
EP type number : 0 410 806 003
Governor
Governor design. : RSV400...1100A2C2204
-4L

Governer no. : 0 420 232 500

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076 ADW-01

1st version kW : 146.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

H10

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 11.2...11.4

100 s: (11.0...11.6)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 3.1...3.5

100 s: (2.8...3.7)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 112.0...114.0

1000 : (110.0...116.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 10.60
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1210...1220
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 585...645

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.60...11.70

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 31.0...35.0
1000 s: (28.5...37.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:
: JOHN DEERE # RE35847

Start-of-delivery mark = 13,5, after
start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 e
 Edition : 07.04.89
 Replaces : 20.12.88
 Test oil : ISO-4113
 Combination no. : 0 400 876 362
 Injection pump
 Pump designation : PES6A100D41ORS2764
 EP type number : 0 410 806 004
 Governor
 Governor design. : RSV600...1100A2C2161
 -6L
 Governor no. : 0 420 232 505

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6466 AZ

1st version kW : 152.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
 : (2.40...2.60)

H12

Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.9...13.1

100 s: (12.7...13.3)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 600.0

Rack travel in mm : 5.6...5.8

Del.quantity cm3/ : 1.4...1.8

100 s: (1.1...2.0)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 900

Del.quantity : 129.5...131.5

1000 : (127.5...133.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 37...45

Testing:

1st rack travel in: 11.50

Speed rpm : 1145...1155

2nd rack travel in: 4.00
Speed rpm : 1195...1205
3rd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 5.60...5.80
Rack travel in mm : 2.00
Speed rpm : 720...780

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.20
2nd pressure hPa : 175
Rack travel in m: 10.10...10.20
3rd pressure hPa : 285
Rack travel in m: 11.80...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 68.5...72.5
1000 s: (65.5...75.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (175.0...205.0)

LOW IDLE

Speed rpm : 600
Rack travel in mm : 5.60...5.80
Del.quantity cm3/ : 14.0...18.0
1000 s: (11.5...20.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: JOHN DEERE # RE35281

Start-of-delivery mark at control-rod
travel 10.5 mm and 15, after start of
delivery.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 8,8 a 1
 Edition : 24.05.89
 Replaces : 9.82
 Test oil : ISO-4113
 Combination no. : 0 401 048 004
 Injection pump
 Pump designation : PE8A100D32ORS3009
 EP type number : 0 411 008 002
 Governor
 Governor design. : RQV750AB995R
 Governor no. : 0 420 213 082

Customer-spec. information
 Customer : MWM

Engine : D,TD232 V8

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 5- 4- 7- 2-
 3- 6

H14

Phasing : 0-30-90-120-180-210-
 270-300
 Tolerance + - : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 710
 Rack travel in mm : 9.60...9.70
 Del.quantity cm3/ : 9.0...9.2
 100 s : (8.8...9.4)
 Spread cm3 : 0.3
 100 s : (0.6)
 2nd speed rpm : 300.0
 Rack travel in mm : 6.6...6.8
 Del.quantity cm3/ : 1.4...2.0
 100 s : (1.2...2.3)
 Spread cm3 : 0.3
 100 s : (0.5)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 710
 Del.quantity : 90.0...92.0
 1000 : (88.0...94.0)
 Spread cm3 : 3.00
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 16...24

Testing:
 1st rack travel in: 8.00
 Speed rpm : 748...753
 2nd rack travel in: 4.00
 Speed rpm : 785...795
 4th rack travel in: 825
 Speed rpm : 0.00...1.00

START CUT-OUT

Speed 1/min : 660 (680)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00
Speed rpm : 748...753

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 15.70...16.30

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.60...6.80
Del.quantity cm³/ : 14.5...20.5
1000 s: (12.0...23.0)
Spread cm³ : 3.00
1000 s: (5.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 e 1
Edition : 4.7.89
Replaces : 7.86
Test oil : ISO-4113
Combination no. : 0 401 276 047
Injection pump
Pump designation : PES6A100D410RS3028
Governor
Governor design. : RSV400...1100A2B2010
DL

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 A

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 1 413 385 007

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95...2..05
: (1.90...2.10)
Rack travel in mm : 9.00...12.00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 11.1...11.3

100 s : (10.8...11.6)

Spread cm3 : 0.3

100 s : (-)

2nd speed rpm : 400

Rack travel in mm : 6.20...6.40

Del.quantity cm3/ : 1.2...1.8

100 s : (-)

Spread cm3 : 0.4

100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 1200

Del.quantity : 111.0...113.0

1000 : (108.0...116.0)

Spread cm3 : 3.0

1000 : (-)

RATED SPEED

1st version

Control lever

position degrees: 39...47

Testing:

1st rack travel in: 10.10

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1185...1215

LOW IDLE 1

Control lever

position degrees: 15...23

Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.80

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 6.20...6.40
Rack travel in mm : 2.00
Speed rpm : 530...590

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.10...11.20
2nd speed rpm : 750
Rack travel in m: 11.80...12.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 380
Rack travel mm : 11.65...11.75

Measurement

Speed 1/min : 500

1st pressure hPa : 170
Rack travel in m: 10.30...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 750
Del.quantity cm3/ : 119.5...122.5
1000 s: (116.5...125.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 77.0...81.0g
1000 s: (74.0...84.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 175.0...195.0
1000 s: (-)
Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version

Speed rpm : 1200
Rack travel in mm : 27.0...33.0

LOW IDLE

Speed rpm : 400
Del.quantity cm3/ : 12.0...18.0
1000 s: (-)

Remarks:

Start-of-delivery mark at control-rod
travel 10.5 mm and 15, after start of
delivery.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 h
Edition : 15.6.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 276 048

Injection pump
Pump designation : PES6A100D410RS3029
Governor
Governor design. : RSV400...1100A2B2019
DL

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 A

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 1 417 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6,00X2,00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 1.95...2.05
: (1.90...2.10)
Rack travel in mm : 10.50
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 10.8...11.0
100 s: (10.6...11.2)

Spread cm3 : 0.3
100 s: (-)

2nd speed rpm : 400
Rack travel in mm : 6.10...6.30
Del.quantity cm3/ : 1.1...1.5
100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Aneroid pressure h: 450
Del.quantity : 108.0...110.0
1000 : (106.0...112.0)
Spread cm3 : 3.0
1000 : (-)

RATED SPEED

1st version
Control lever
position degrees: 39...47

Testing:
1st rack travel in: 10.00
Speed rpm : 1140...1160
2nd rack travel in: 5.00
Speed rpm : 1185...1215

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 400

Rack travel in mm : 5.70

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 6.10...6.30
Rack travel in mm : 2.00
Speed rpm : 470...530

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1100
Rack travel in m: 10.95...11.05
2nd speed rpm : 750
Rack travel in m: 11.70...11.80

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 550
Pressure hPa : 110 *

Measurement

Speed 1/min : 550

1st pressure hPa : 500
Rack travel in m: 11.00...11.10

START CUT-OUT

Speed 1/min : 350...750

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 450
Speed rpm : 750
Del.quantity cm3/ : 117.5...120.5
1000 s: (115.5...122.5)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 81.0...89.0
1000 s: (79.0...91.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 11450...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (-)

HIGH IDLE

1st version

Speed rpm : 1200
Del.quantity cm3/ : 25.0...35.0
1000 s: (-)

LOW IDLE

Speed rpm : 400
Del.quantity cm3/ : 11.5...15.5
1000 s: (-)

Remarks:

* Start of LDA (manifold-pressure compensator) movement

Start-of-delivery mark at control-rod travel 10.5 mm and 15, after start of delivery.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 b 1
 Edition : 07.04.89
 Replaces : 15.6.88
 Test oil : ISO-4113

Combination no. : 0 401 276 049

Injection pump
 Pump designation : PES6A100D410RS3034
 EP type number : 0 411 206 016
 Governor
 Governor design. : RSV600...1100A2C2080
 L
 Governor no. : 9 420 234 159

Customer-spec. information
 Customer : JOHN DEERE

Engine : 6466 A

1st version kW : 152.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 1.95...2.05
 : (1.90...2.10)

H2O

Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del.quantity cm³/ : 12.9...13.1

100 s: (12.7...13.3)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 600.0
 Rack travel in mm : 5.7...5.9
 Del.quantity cm³/ : 2.7...3.1
 100 s: (2.5...3.2)

Spread cm³ : 0.6
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 500
 Del.quantity : 129.0...131.0
 1000 : (127.0...133.0)

Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 33...41

Testing:
 1st rack travel in: 10.70
 Speed rpm : 1145...1155

2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 15...24
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.00
Speed rpm : 630...690

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 8.60...8.70

Measurement

Speed 1/min : 500

1st pressure hPa : 333
Rack travel in m: 11.55...11.65
2nd pressure hPa : 233
Rack travel in m: 10.75...11.15

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : -
1000 s: (65.0...75.0)

BREAKAWAY

1st version:

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100

H21

Del.quantity cm3/ : 170.0...190.0
1000 s: (165.0...195.0)
Rack travel in mm : 19.00...21.00

HIGH IDLE

1st version

Speed rpm : 1200
Rack travel in mm : 4.70...4.90

LOW IDLE

Speed rpm : 600
Rack travel in mm : 5.70...5.90
Del.quantity cm3/ : 27.0...31.0
1000 s: (25.5...32.5)
Spread cm3 : 6.00
1000 s: (7.50)

Remarks:

: JOHN DEERE # RE23751

Start-of-delivery mark at control-rod
travel 10.5 mm and 15, after start of
delivery.

BOSCH INJ. PUMP TEST SPECIFICATIONS

10-7-6

Note remarks

Test sheet : GUS 31,8 a1
Edition : 4.7.89
Replaces : 5.85
Test oil : ISO-4113

Combination no. : 0 401 830 709

Injection pump
Pump designation : PE12P130A12ORS3094-2
EP type number : 0 411 830 705
Governor
Governor design. : RQV350...750PA602-2

Customer-spec. information
Customer : GUASCOR

Engine : E 318

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 074

Outside diameter
x Wall thickness
x Length mm : 6,00X1,50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
: (3.55...3.75)

Rack travel in mm : 9.00...12.00

Firing order : 1-12-9-4-5-8-11-2-3-

H22

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.00...10.10

Del.quantity cm3/ : 24.5...24.8

100 s : (-)

Spread cm3 : 0.6

100 s : (1.0)

2nd speed rpm : 350

Rack travel in mm : 3.80...4.00

Del.quantity cm3/ : 2.1...2.7

100 s : (-)

Spread cm3 : 1.0

100 s : (1.4)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 245.0...248.0

1000 : (-)

Spread cm3 : 6.0

1000 : (10.0)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.00

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 776...789

4th rack travel in: 900

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 4...12

Testing:

Speed rpm : 100

Minimum rack travel: 5.40

Speed rpm : 350

Rack travel in mm : 3.80...4.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00

Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 350

Del.quantity cm³/ : 21.0...27.0

1000 s: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 20,9 j
 Edition : 30.05.89
 Replaces : 10.2.89
 Test oil : ISO-4113

Combination no. : 0 401 840 109

Injection pump
 Pump designation : PE12P120A520/4LS857
 EP type number : 0 411 820 035
 Governor
 Governor design. : RQV250...1050PA889
 Governor no. : 0 421 813 696

Customer-spec. information
 Customer : MAN

Engine : D2542TE60

1st version kW : 361.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-

Phasing : 345
 Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 8.20...8.30

Del.quantity cm3/ : 14.5...14.7
 100 s: (14.2...15.0)

Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 4.1...4.3
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm3 : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 0.80...1.20
 2nd speed rpm : 700
 travel mm : 4.60...5.00
 3rd speed rpm : 1050
 travel mm : 7.40...7.60
 4th speed rpm : 1400
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1125
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050

Del.quantity : 145.0...147.0
1000 : (142.0...150.0)
Spread cm3 : 5.00
1000 : (9.00)

APPLICATION : MAN-NR. 2-7906
Rail car

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:
1st rack travel in: 10.80
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 5.70
Speed rpm : 250
Rack travel in mm : 4.10...4.30

CONSTANT REGULATION
Speed rpm : 250...400

START CUT-OUT

Speed 1/min : 190 (210)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.10...4.30
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

H25

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 19,2 a4
 Edition : 09.06.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 840 766
 Injection pump
 Pump designation : PE12P110A920LS3173
 EP type number : 0 411 810 708
 Governor
 Governor design. : RQV475...1075PA907-1
 Governor no. : 0 421 813 739

Customer-spec. information
 Customer : KHD

Engine : BF12L513C

1st version kW : 333.0
 Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 4- 9- 8- 5- 2-

H26

11- 10- 3- 6- 7- 12

Phasing : 0-15-60-75-120-135-
 180-195-240-255-300-
 315
 Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 11.70...11.80

Del. quantity cm³/ : 13.4...13.6

100 s : (13.2...13.8)

Spread cm³ : 0.5

100 s : (0.8)

2nd speed rpm : 475.0

Rack travel in mm : 6.6...6.8

Del. quantity cm³/ : 1.7...2.3

100 s : (1.4...2.5)

Spread cm³ : 0.7

100 s : (1.0)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 475
 travel mm : 1.10...1.50

2nd speed rpm : 650
 travel mm : 3.40...4.00

3rd speed rpm : 950
 travel mm : 5.60...6.20

4th speed rpm : 1100
 travel mm : 7.70...7.90

5th speed rpm : 1150
 travel mm : 8.80...9.20

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1120

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Del. quantity : 134.0...136.0

1000 : (132.0...138.0)

Spread cm3 : 5.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:

1st rack travel in: 10.70
Speed rpm : 1095...1105
2nd rack travel in: 4.00
Speed rpm : 1135...1165
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 20...28

Testing:

Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 475
Rack travel in mm : 6.60...6.80

CONSTANT REGULATION

Speed rpm : 475...640

TORQUE CONTROL

Dimension a mm : 0.60
Torque control curve - 1st version
1st speed rpm : 1075
Rack travel in m: 11.70...11.80
2nd speed rpm : 800
Rack travel in m: 12.30...12.50
3rd speed rpm : 950
Rack travel in m: 11.90...12.10

START CUT-OUT

Speed 1/min : 395 (415)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 143.0...147.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1095...1105

H27

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...165.0
1000 s: (131.0...169.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

11- 10- 3- 6- 7- 12

Note remarks

Test sheet : KHD 19,2 b3
Edition : 23.06.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 840 767
Injection pump
Pump designation : PE12P110A920LS3173
EP type number : 0 411 810 708
Governor
Governor design. : RQ300/1150PA894-1
Governor no. : 0 421 801 485

Customer-spec. information
Customer : KHD

Engine : BF12L513 C

1st version kW : 353.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 4- 9- 8- 5- 2-

H28

Phasing : 0-15-60-75-120-135-
180-195-240-255-300-
315
Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150
Rack travel in mm : 12.40...12.50
Del.quantity cm3/ : 15.4...15.6
100 s : (15.1...15.9)
Spread cm3 : 0.5
100 s : (0.8)

2nd speed rpm : 300.0
Rack travel in mm : 6.6...6.8
Del.quantity cm3/ : 1.5...2.1
100 s : (1.2...2.3)
Spread cm3 : 0.7
100 s : (1.0)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 600
Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h: 750
Del.quantity : 154.0...156.0
1000 : (151.0...159.0)
Spread cm3 : 5.00
1000 : (8.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 600
Rack travel in mm : 20.0

Testing:
1st rack travel in: 11.40
Speed rpm : 1195...1210
2nd rack travel in: 4.00

Speed rpm : 1260...1290
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.7

Testing:

Speed rpm : 100
Minimum rack trave: 8.10
Speed rpm : 300
Rack travel in mm : 6.60...6.80
Rack travel in mm : 2.00
Speed rpm : 425...465

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.40...12.50
2nd speed rpm : 750
Rack travel in m: 12.80...13.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 750
Rack travel mm : 12.80...13.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...10.90
2nd pressure hPa : 485
Rack travel in m: 12.30...12.40
3rd pressure hPa : 310
Rack travel in m: 11.30...11.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm3/ : 123.0...127.0
1000 s: (121.0...129.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 1195...1210

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...165.0
1000 s: (131.0...169.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 a 4
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 185
 Injection pump
 Pump designation : PE6P100A720RS15
 EP type number : 0 411 806 106
 Governor
 Governor design. : RQ250/1100PA6DR
 Governor no. : 0 421 803 007

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 355

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C. : 38...42
 Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

J02

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1090

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del.quantity cm3/ : 1.8...2.4

100 s: (1.5...2.6)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1090

Del.quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm3 : 3.00

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00

Speed rpm : 1120...1130

2nd rack travel in: 4.00

Speed rpm : 1180...1210

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 8.0

Testing:

Speed rpm : 100

Minimum rack trave: 9.60

Speed rpm : 250

Rack travel in mm : 7.90...8.10

Rack travel in mm : 2.00

Speed rpm : 410...450

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 450

Del.quantity cm3/ : 89.0...93.0

1000 s: (86.5...95.5)

Spread cm3 : 5.00

1000 s: (7.)

Speed rpm : 700

Del.quantity cm3/ : 101.0...104.0

1000 s: (98.5...106.5)

Spread cm3 : 5.00

1000 s: (7.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.00

Speed rpm : 1120...1130

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 a 2
 Edition : 07.04.89
 Replaces : 11.85
 Test oil : ISO-4113
 Combination no. : 0 401 846 186
 Injection pump
 Pump designation : PE6P100A720RS15
 EP type number : 0 411 806 106
 Governor
 Governor design. : RQ250/1100PA43DR
 Governor no. : 0 421 803 020

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 355

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

J04

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.40...13.50

Del.quantity cm3/ : 11.6...11.8

100 s: (11.4...12.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del.quantity cm3/ : 1.8...2.4

100 s: (1.5...2.6)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 116.0...118.0

1000 : (114.0...120.0)

Spread cm3 : 3.00

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 12.40

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1195...1225

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 8.0

Testing:

Speed rpm : 100

Minimum rack trave: 9.60

Speed rpm : 250

Rack travel in mm : 7.90...8.10

Rack travel in mm : 2.00

Speed rpm : 410...450

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 450

Del.quantity cm3/ : 98.0...102.0

1000 s: (95.5...104.5)

Spread cm3 : 5.00

1000 s: (7.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 a 1
Edition : 07.04.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 261
Injection pump
Pump designation : PE6P100A320LS805
EP type number : 0 411 806 148
Governor
Governor design. : RQ300/1250PA187R
Governor no. : 0 421 801 034

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM401

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50
: (3.35...3.55)
Rack travel in mm : 9.00...12.00

Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 10.7...10.9

100 s: (10.5...11.1)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 7.9...8.1

Del.quantity cm3/ : 1.8...2.4

100 s: (1.5...2.6)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.80...14.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 107.0...109.0

1000 : (105.0...111.0)

Spread cm3 : 3.00

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 14.2

Testing:

1st rack travel in: 10.10

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1325...1355

4th rack travel in: 1450

Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 8.0

Testing:

Speed rpm : 100

Minimum rack trave: 9.50

Speed rpm : 300

Rack travel in mm : 7.90...8.10

Rack travel in mm : 2.00

Speed rpm : 420...450

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 11.10...11.20

2nd speed rpm : 600

Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

Del.quantity cm3/ : 85.0...90.0

1000 s: (83.0...92.0)

Spread cm3 : 4.00

1000 s: (7.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10

Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 110.0...130.0

1000 s: (106.0...134.0)

HIGH IDLE

1st version

Rack travel in mm : 3.90...4.10

Spread cm3 : 4.00

1000 s: (6.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 e 1
Edition : 21.04.89
Replaces : 21.5.87
Test oil : ISO-4113

Combination no. : 0 401 846 329

Injection pump
Pump designation : PE6P100A720RS15
EP type number : 0 411 806 106
Governor
Governor design. : RQ250/1100PA269R
Governor no. : 0 421 801 050

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 355

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

J08

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 13.00...13.10

Del.quantity cm3/ : 11.8...12.0

100 s: (11.6...12.2)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.4...7.6

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.5)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 118.5...120.5

1000 : (116.5...122.5)

Spread cm3 : 3.00

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 12.00

Speed rpm : 1130...1140

2nd rack travel in: 4.00

Speed rpm : 1200...1230

4th rack travel in: 1350

Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.00

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 385...425

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 450

Del.quantity cm3/ : 101.0...105.0

1000 s: (99.0...107.0)

Spread cm3 : 5.00

1000 s: (7.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00

Speed rpm : 1130...1140

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 f
Edition : 02.05.89
Replaces : 9.3.87
Test oil : ISO-4113

Combination no. : 0 401 846 398

Injection pump
Pump designation : PE6P110A72ORS371
EP type number : 0 411 816 123
Governor
Governor design. : RQ300/1100PA424R
Governor no. : 0 421 801 086

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 355 A

1st version kW : 206.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 16.0...16.2

100 s: (15.7...16.4)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 650

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del.quantity : 160.0...162.0

1000 : (157.5...164.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.70

Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 300
Rack travel in mm : 6.10...6.30
Rack travel in mm : 2.00
Speed rpm : 410...450

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.70...11.80
2nd speed rpm : 650
Rack travel in m: 11.70...11.90

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.70...11.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.00...11.10
2nd pressure hPa : 390
Rack travel in m: 11.50...11.60
3rd pressure hPa : 350
Rack travel in m: 11.20...11.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm3/ : 156.0...160.0
1000 s: (153.0...163.0)

Spread cm3 : 6.00
1000 s: (9.00)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 135.0...137.0
1000 s: (132.0...140.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS _

Note remarks

Test sheet : MB 11,8 f 2
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 398
 Injection pump
 Pump designation : PE6P110A72ORS371-1
 EP type number : 0 411 816 166
 Governor
 Governor design. : RQ300/1100PA424-1
 Governor no. : 0 421 801 395

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM355A

1st version kW : 206.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
 Rack travel in mm : 11.70...11.80
 Del.quantity cm3/ : 16.0...16.2
 100 s: (15.7...16.4)
 Spread cm3 : 0.4
 100 s: (0.8)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.2)
 Spread cm3 : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -2
 Speed rpm : 650
 Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Aneroid pressure h: 700
 Del.quantity : 160.0...162.0
 1000 : (157.5...164.5)
 Spread cm3 : 4.00
 1000 : (8.00)

RATED SPEED

1st version

Setting point:
 Speed rpm : 650
 Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.70

Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 300
Rack travel in mm : 6.10...6.30
Rack travel in mm : 2.00
Speed rpm : 410...450

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.70...11.80
2nd speed rpm : 650
Rack travel in m: 11.70...11.90

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.70...11.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.00...11.10
2nd pressure hPa : 390
Rack travel in m: 11.50...11.60
3rd pressure hPa : 350
Rack travel in m: 11.20...11.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm3/ : 156.0...160.0
1000 s: (153.0...163.0)

Spread cm3 : 6.00
1000 s: (9.00)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 135.0...137.0
1000 s: (132.0...140.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (131.0...159.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 9,6 n
Edition : 07.04.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 406

Injection pump
Pump designation : PE6P100A320LS805
EP type number : 0 411 806 148
Governor
Governor design. : RQ300/1150PA436R
Governor no. : 0 421 801 089

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 401

1st version kW : 136.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.40...3.50
: (3.35...3.55)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1130

Rack travel in mm : 10.50...10.60

Del.quantity cm3/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 7.8...8.0

Del.quantity cm3/ : 2.5...3.0

100 s: (2.2...3.2)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.80...14.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1130

Del.quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm3 : 3.00

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 14.2

Testing:

1st rack travel in: 9.50

Speed rpm : 1180...1190

2nd rack travel in: 4.10
Speed rpm : 1250...1280
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.9

Testing:

Speed rpm : 100
Minimum rack trave: 9.40
Speed rpm : 300
Rack travel in mm : 7.80...8.00
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.50...10.60
2nd speed rpm : 650
Rack travel in m: 10.50...10.70

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1180...1190

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...130.0
1000 s: (106.0...134.0)

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 k 1
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 443
 Injection pump
 Pump designation : PE6P110A720RS371-1
 EP type number : 0 411 816 166
 Governor
 Governor design. : RQV300...1100PA551
 Governor no. : 0 421 813 272

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM355A

1st version kW : 206.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C. : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 16.0...16.2

100 s: (15.7...16.4)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.3

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.40

2nd speed rpm : 440

travel mm : 2.50...2.90

3rd speed rpm : 1150

travel mm : 8.40...8.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del.quantity : 160.0...162.0

1000 : (157.5...164.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 64...68

Testing:

1st rack travel in: 10.70

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1215...1245

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 100

Minimum rack travel: 8.00

Speed rpm : 300

Rack travel in mm : 6.20...6.40

Rack travel in mm : 2.00

Speed rpm : 440...500

CONSTANT REGULATION

Speed rpm : 275...330

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 700

Rack travel mm : 11.70...11.80

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 11.00...11.10

2nd pressure hPa : 390

Rack travel in m: 11.50...11.60

3rd pressure hPa : 350

Rack travel in m: 11.20...11.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 600

Del.quantity cm3/ : 156.0...160.0

1000 s: (153.0...163.0)

Spread

cm3 : 6.00

1000 s: (9.00)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 135.0...137.0

1000 s: (132.0...140.0)

Spread

cm3 : 6.00

1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 135.0...155.0

1000 s: (131.0...159.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 i 1
 Edition : 07.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 450
 Injection pump
 Pump designation : PE6P110A720RS371-1
 EP type number : 0 411 816 166
 Governor
 Governor design. : RQV300...1100PA568
 Governor no. : 0 421 813 286

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM355A

1st version kW : 206.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C. : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 16.0...16.2

100 s: (15.7...16.5)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.3

Del.quantity cm3/ : 1.3...1.9

100 s: (1.0...2.1)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...2.00

2nd speed rpm : 540

travel mm : 4.40...4.60

3rd speed rpm : 820

travel mm : 5.90...6.20

4th speed rpm : 1100

travel mm : 8.30...8.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del.quantity : 160.0...162.0

1000 : (157.0...165.0)

Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 64...68

Testing:
1st rack travel in: 10.70
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1
Control lever
position degrees: 12...20

Testing:
Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 300
Rack travel in mm : 6.20...6.40

CONSTANT REGULATION
Speed rpm : 275...330

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.70...11.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.00...11.10
2nd pressure hPa : 390
Rack travel in m: 11.50...11.60
3rd pressure hPa : 350
Rack travel in m: 11.20...11.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 600

Del.quantity cm3/ : 155.0...159.0
1000 s: (152.0...162.0)
Spread cm3 : 6.00
1000 s: (9.00)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (131.0...159.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 h
Edition : 29.03.89
Replaces : 2.12.88
Test oil : ISO-4113
Combination no. : 0 401 846 482
Injection pump
Pump designation : PE6P120A32ORS257
EP type number : 0 411 826 075
Governor
Governor design. : RQV250...1100PA680
Governor no. : 0 421 813 374

Customer-spec. information
Customer : ENASA

Engine : 96 T1 AX,BX

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1080

Rack travel in mm : 10.00...10.10

Del.quantity cm3/ : 18.8...19.0

100 s: (18.5...19.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.5...5.7

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 350
travel mm : 1.70...2.30

3rd speed rpm : 650
travel mm : 4.00...4.60

4th speed rpm : 1145
travel mm : 8.30...8.50

5th speed rpm : 1225
travel mm : 9.20...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1130

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1080

Aneroid pressure h: 900

Del.quantity : 188.0...190.0

1000 : (185.0...193.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 43...51

Testing:
1st rack travel in: 9.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1320
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...22

Testing:
Speed rpm : 100
Minimum rack travel: 7.10
Speed rpm : 250
Rack travel in mm : 5.50...5.70

CONSTANT REGULATION
Speed rpm : 250...380

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1080
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.50...10.70
3rd speed rpm : 850
Rack travel in m: 10.20...10.40

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 10.20...10.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.70...9.10
2nd pressure hPa : 415
Rack travel in m: 10.00...10.10
3rd pressure hPa : 290
Rack travel in m: 9.20...9.40

START CUT-OUT

Speed 1/min : 170 (150)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 650
Del.quantity cm3/ : 173.0...179.0
1000 s: (170.0...182.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 128.0...130.0
1000 s: (125.0...133.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)
Rack travel in mm : 19.50...21.00

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,6 a
 Edition : 07.04.89
 Replaces : 8.6.88
 Test oil : ISO-4113

Combination no. : 0 401 846 494

Injection pump
 Pump designation : PE6P100A720RS473
 EP type number : 0 411 806 196
 Governor
 Governor design. : RQ300/1100PA269-1
 Governor no. : 0 421 801 237

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 355

1st version kW : 177.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness : 6.00X1.50X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.0...12.2

100 s: (11.8...12.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 8.1...8.3

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.5)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 2.30...2.60

2nd speed rpm : 600

travel mm : 6.90...7.10

3rd speed rpm : 1150

travel mm : 7.30...7.70

4th speed rpm : 1200

travel mm : 10.00...10.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.40...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 120.0...122.0

1000 : (118.0...124.0)

Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 43...51

Testing:
1st rack travel in: 11.50
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1
Control lever
position degrees: 13...21

Testing:
Speed rpm : 200
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 6.00...6.30
Rack travel in mm : 2.00
Speed rpm : 350...390

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del. quantity cm³/ : 110.0...114.0
1000 s: (107.5...116.5)
Spread cm³ : 5.00
1000 s: (7.)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,6 a 2
 Edition : 07.04.89
 Replaces : 11.85
 Test oil : ISO-4113

Combination no. : 0 401 846 514

Injection pump
 Pump designation : PE6P100A720RS473
 EP type number : 0 411 806 196
 Governor
 Governor design. : RQ300/1100PA269-2
 Governor no. : 0 421 801 293

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 355

1st version kW : 155.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 10.4...10.6

100 s: (10.2...10.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.6

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.5)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.40...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 104.0...106.0

1000 : (102.0...108.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 13.6

Testing:

1st rack travel in: 10.80

Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1195...1215
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.5

Testing:

Speed rpm : 100
Minimum rack trave: 10.10
Speed rpm : 300
Rack travel in mm : 8.40...8.60
Rack travel in mm : 2.00
Speed rpm : 440...480

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 89.0...93.0
1000 s: (86.5...95.5)
Spread cm3 : 5.00
1000 s: (7.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 c
Edition : 30.05.89
Replaces : 25.3.88
Test oil : ISO-4113

Combination no. : 0 401 846 547

Injection pump
Pump designation : PE6P110A82QLS513
EP type number : 0 411 816 174
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Customer-spec. information
Customer : ENASA

Engine : 95 R1 AX

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.25)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 17.6...17.8

100 s: (17.3...18.1)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...6.8

Del.quantity cm3/ : 1.8...2.3

100 s: (1.5...2.5)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 400
travel mm : 2.20...2.80

3rd speed rpm : 650
travel mm : 4.50...5.10

4th speed rpm : 1050
travel mm : 8.50...8.70

5th speed rpm : 1140
travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h: 900

Del.quantity : 176.0...178.0

1000 : (173.0...181.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Testing:
1st rack travel in: 11.80
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 9...17

Testing:
Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 250
Rack travel in mm : 6.60...6.80

CONSTANT REGULATION
Speed rpm : 250...380

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 12.80...12.90
2nd speed rpm : 700
Rack travel in m: 13.30...13.50
3rd speed rpm : 850
Rack travel in m: 13.00...13.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.00...13.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.20
2nd pressure hPa : 440
Rack travel in m: 12.50...12.60
3rd pressure hPa : 290
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 170 (150)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 600
Del.quantity cm3/ : 178.0...182.0
1000 s: (175.0...185.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 12,0 a
Edition : 29.03.89
Replaces : 22.1.88
Test oil : ISO-4113

Combination no. : 0 401 846 548

Injection pump
Pump designation : PE6P120A32ORS257
EP type number : 0 411 826 075
Governor
Governor design. : RQ250/1100PA877
Governor no. : 0 421 801 409

Customer-spec. information
Customer : ENASA

Engine : 9156.13V1

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1080

Rack travel in mm : 10.60...10.70

Del.quantity cm3/ : 20.0...20.2

100 s: (19.7...20.5)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.5...5.7

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.40...16.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1080

Aneroid pressure h: 900

Del.quantity : 200.0...202.0

1000 : (197.0...205.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 16.0

Testing:

1st rack travel in: 9.60

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1190...1220

4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack travel: 7.10
Speed rpm : 250
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1080
Rack travel in m: 10.60...10.70
2nd speed rpm : 600
Rack travel in m: 11.10...11.30
3rd speed rpm : 720
Rack travel in m: 10.70...10.90

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.10...11.30

Measurement

Speed 1/min : 500
1st pressure hPa : -
Rack travel in m: 8.70...9.10
2nd pressure hPa : 340
Rack travel in m: 9.30...9.40
3rd pressure hPa : 470
Rack travel in m: 10.10...10.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 600
Del.quantity cm3/ : 182.0...188.0
1000 s: (179.0...191.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 130.0...132.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 d
Edition : 07.02.89
Replaces : 9.1.89
Test oil : ISO-4113

Combination no. : 0 401 846 549

Injection pump
Pump designation : PE6P100A820LS503
EP type number : 0 411 806 197
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Customer-spec. information
Customer : ENASA

Engine : 95 T1 AX,BX

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del.quantity cm³/ : 16.5...16.7

100 s: (16.3...16.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.7...7.9

Del.quantity cm³/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm³ : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 400
travel mm : 2.20...2.80

3rd speed rpm : 650
travel mm : 4.50...5.10

4th speed rpm : 1050
travel mm : 8.50...8.70

5th speed rpm : 1140
travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h: 900

Del.quantity : 165.0...167.0

1000 : (163.0...169.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:
1st rack travel in: 13.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...350

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 14.20...14.30
2nd speed rpm : 550
Rack travel in m: 15.00...15.30
3rd speed rpm : 750
Rack travel in m: 14.80...15.00
4th speed rpm : 850
Rack travel in m: 14.40...14.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 14.70...14.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.90...13.30
2nd pressure hPa : 400
Rack travel in m: 14.10...14.20
3rd pressure hPa : 300
Rack travel in m: 13.40...13.60

START CUT-OUT

K03

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 170.0...174.0
1000 s: (168.0...176.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 130.0...132.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 13.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 d1
 Edition : 07.02.89
 Replaces : 9.1.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 549A
 Injection pump
 Pump designation : PE6P100A820LS503
 EP type number : 0 411 806 197
 Governor
 Governor design. : RQV250...1000PA811
 Governor no. : 0 421 813 556

Customer-spec. information
 Customer : ENASA

Engine : 95 T1 BV

1st version kw : 165.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

K04

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del.quantity cm3/ : 16.5...16.7

100 s: (16.3...16.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.7...7.9

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 400

travel mm : 2.20...2.80

3rd speed rpm : 650

travel mm : 4.50...5.10

4th speed rpm : 1050

travel mm : 8.50...8.70

5th speed rpm : 1140

travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h: 900

Del.quantity : 165.0...167.0

1000 : (163.0...169.0)

Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:
1st rack travel in: 13.20
Speed rpm : 1030...1040
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...350

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 14.20...14.30
2nd speed rpm : 550
Rack travel in m: 15.00...15.30
3rd speed rpm : 750
Rack travel in m: 14.80...15.00
4th speed rpm : 850
Rack travel in m: 14.40...14.60

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 14.70...14.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.90...13.30
2nd pressure hPa : 400
Rack travel in m: 14.10...14.20
3rd pressure hPa : 300

K05

Rack travel in m: 13.40...13.60

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 170.0...174.0
1000 s: (168.0...176.0)
Speed rpm : 450
Del.quantity cm3/ : 90.0...94.0
1000 s: (88.0...96.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 130.0...132.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.20
Speed rpm : 1030...1040

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 d2
 Edition : 07.02.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 549B
 Injection pump
 Pump designation : PE6P100A820LS503
 EP type number : 0 411 806 197
 Governor
 Governor design. : RQV250...1000PA811
 Governor no. : 0 421 813 556

Customer-spec. information
 Customer : ENASA

Engine : 95 T1 AW

1st version kW : 155.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

K06

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 13.30...13.40

Del.quantity cm3/ : 15.0...15.2

100 s: (14.8...15.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.7...7.9

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 400
 travel mm : 2.20...2.80

3rd speed rpm : 650
 travel mm : 4.50...5.10

4th speed rpm : 1050
 travel mm : 8.50...8.70

5th speed rpm : 1140
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h: 900

Del.quantity : 150.0...152.0

1000 : (148.0...154.0)

Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:
1st rack travel in: 12.30
Speed rpm : 1030...1040
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 10...18

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...350

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 13.30...13.40
2nd speed rpm : 550
Rack travel in m: 14.00...14.30
3rd speed rpm : 750
Rack travel in m: 13.80...14.00
4th speed rpm : 850
Rack travel in m: 13.50...13.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.30...13.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.70...13.00
2nd pressure hPa : 260
Rack travel in m: 13.10...13.20

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 143.0...147.0
1000 s: (141.0...149.0)
Speed rpm : 450
Del.quantity cm3/ : 89.0...93.0
1000 s: (87.0...95.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 127.0...129.0
1000 s: (124.0...132.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 1030...1040

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 e
Edition : 07.02.89
Replaces : 24.6.88
Test oil : ISO-4113

Combination no. : 0 401 846 552

Injection pump
Pump designation : PE6P100A820LS503-1
EP type number : 0 411 806 198
Governor
Governor design. : RQ250/1000PA352-1
Governor no. : 0 421 801 412

Customer-spec. information
Customer : ENASA

Engine : 95 T1 AZ,CZ

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.85...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del.quantity cm3/ : 16.5...16.7

100 s : (16.3...16.9)

Spread cm3 : 0.3

100 s : (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.8...8.0

Del.quantity cm3/ : 1.8...2.2

100 s : (1.5...2.4)

Spread cm3 : 0.3

100 s : (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 16.00...17.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h: 900

Del.quantity : 165.0...167.0

1000 : (163.0...169.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.5

Testing:

1st rack travel in: 13.20

Speed rpm : 1045...1060

2nd rack travel in: 4.00

Speed rpm : 1100...1130

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.40

Torque control curve - 1st version

1st speed rpm : 980

Rack travel in m: 14.20...14.30

2nd speed rpm : 700

Rack travel in m: 15.00...15.50

3rd speed rpm : 825

Rack travel in m: 14.40...14.80

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 900

Rack travel mm : 14.70...14.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 12.90...13.30

2nd pressure hPa : 400

Rack travel in m: 14.10...14.20

3rd pressure hPa : 300

Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 700

Del.quantity cm³/ : 170.0...174.0

1000 s: (168.0...176.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm³/ : 130.0...132.0

1000 s: (127.0...135.0)

BREAKAWAY

1st version

K09

1mm rack travel less than

full load rack tr: 13.20

Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 150.0...170.0

1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 h
 Edition : 30.09.88
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 561
 Injection pump
 Pump designation : PE6P120A32ORS519
 EP type number : 0 411 826 145
 Governor
 Governor design. : RQ275/1050PA899
 Governor no. : 0 421 801 460

Customer-spec. information
 Customer : RVI

Engine : MIHS 06.20.45

1st version kW : 185.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 16.7...16.9

100 s: (16.4...17.2)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h: 700

Del.quantity : 167.0...169.0

1000 : (164.0...172.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.00

Speed rpm : 1110...1125
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 275

Rack travel in mm : 5.0

Testing:

Speed rpm : 200

Minimum rack travel: 6.70

Speed rpm : 275

Rack travel in mm : 4.90...6.10

Rack travel in mm : 2.00

Speed rpm : 275...315

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 700

Rack travel mm : 11.00...11.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.40...9.60

2nd pressure hPa : 260

Rack travel in m: 10.50...10.60

3rd pressure hPa : 220

Rack travel in m: 9.60...9.80

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 750

Del.quantity cm3/ : 159.0...165.0

1000 s: (156.0...168.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 104.0...106.0

1000 s: (101.0...109.0)

BREAKAWAY

1st version

K11

1mm rack travel less than

full load rack tr: -1.00

Speed rpm : 1110...1125

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0

1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275

Rack travel in mm : 5.90...6.10

Del.quantity cm3/ : 12.0...18.0

1000 s: (9.0...21.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 c
Edition : 07.04.89
Replaces : 4.85
Test oil : ISO-4113

Combination no. : 0 401 846 723

Injection pump
Pump designation : PE6P110A320LS3805
EP type number : 0 411 816 718
Governor
Governor design. : RQ300/1150PA187-2R
Governor no. : 0 421 801 112

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 158.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.2...12.4

100 s: (11.9...12.6)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.3...8.5

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.2)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.80...14.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 122.0...124.0

1000 : (119.5...126.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 14.2

Testing:

1st rack travel in: 11.50

Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.4

Testing:

Speed rpm : 100
Minimum rack trave: 9.90
Speed rpm : 300
Rack travel in mm : 8.30...8.50
Rack travel in mm : 2.00
Speed rpm : 430...470

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.50...12.60
2nd speed rpm : 600
Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 114.0...118.0
1000 s: (111.0...121.0)
Spread cm3 : 6.00
1000 s: (9.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 c 1
 Edition : 4.4.89
 Replaces : 22.10.86
 Test oil : ISO-4113
 Combination no. : 0 401 846 749
 Injection pump
 Pump designation : PE6P110A320LS3805
 EP type number : 0 411 816 718
 Governor
 Governor design. : RQ300/1150PA187-6
 Governor no. : 0 421 801 155

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 421

1st version kW : 159.0
 Rated speed : 2300
 2nd version kW : 159.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness : 6.00X1.50X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

K14

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6-3-5-2-4-1

Phasing : 0-45-120-165-240-285
 Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 11.70...11.80
 Del.quantity cm3/ : 13.3...13.5
 100 s: (13.0...13.7)
 Spread cm3 : 0.4
 100 s: (0.8)

2nd speed rpm : 300
 Rack travel in mm : 7.80...8.00
 Del.quantity cm3/ : 1.2...1.8
 100 s: (0.9...2.0)
 Spread cm3 : 0.4
 100 s: (0.8)

1st speed rpm : 1150
 Rack travel in mm : 12.5...12.6
 Del.quantity cm3/ : 12.8...13.0*
 100 s: (12.5...13.3)
 Spread cm3 : 0.4
 100 s: (0.8)
 2nd speed rpm : 300
 Rack travel in mm : 8.30...8.50
 Del.quantity cm3/ : 1.2...1.8 *
 100 s: (-)
 Spread cm3 : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 650
 Rack travel in mm : 13.20...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 133.0...135.0
 1000 : (130.5...137.5)
 Spread cm3 : 4.00
 1000 : (8.00)

2nd version

Speed rpm : 1150
Del.quantity cm3/ : 128.0...130.0
1000 s: (125.0...133.0)
Spread cm3 : 4.0
1000 s: (8.0)

RATED SPEED

1st version

Setting point:

Speed rpm : 650
Rack travel in mm : 13.6

Testing:

1st rack travel in: 10.70
Speed rpm : 1195...1210
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

2nd version

Setting point:

Speed rpm : 650
Rack travel in mm : 13.6

Testing:

1st rack travel in: 11.50
Speed rpm : 1195...1210
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300
Rack travel in mm : 7.90

Testing:

Speed rpm : 100
Minimum rack travel: 9.50
Speed rpm : 300
Rack travel in mm : 7.80...8.00
Rack travel in mm : 2.00
Speed rpm : 410...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 112.0...116.0
1000 s: (109.0...119.0)
Spread cm3 : 6.00
1000 s: (9.00)

2nd version

Speed rpm : 600
Del.quantity cm3/ : 120.0...124.0
1000 s: (117.0...127.0)
Spread cm3 : 6.00
1000 s: (9.00)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1195...1210

2nd version

1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 1195...1210

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

Version 1: Without return-flow
restriction
Version 2: With return-flow restriction

* Version 2

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 c 5
Edition : 28.06.89
Replaces : 19.2.88
Test oil : ISO-4113

Combination no. : 0 401 846 749

Injection pump
Pump designation : PE6P110A320LS3805-10
EP type number : 0 411 816 740
Governor
Governor design. : RQ300/1150PA187-6
Governor no. : 0 421 801 155

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 159.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.70...11.80

Del.quantity cm³/ : 11.4...11.6

100 s: (11.1...11.9)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.8...8.0

Del.quantity cm³/ : 1.2...1.8

100 s: (0.9...2.0)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.20...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 114.0...116.0

1000 : (111.0...119.0)

Spread cm³ : 4.00

1000 : (7.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 13.6

Testing:

1st rack travel in: 10.70

Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.9

Testing:

Speed rpm : 100
Minimum rack trave: 9.50
Speed rpm : 300
Rack travel in mm : 7.80...8.00
Rack travel in mm : 2.00
Speed rpm : 410...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1150
Del.quantity cm3/ : 132.0...136.0
1000 s: (129.0...139.0)
Spread cm3 : 5.00
1000 s: (8.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 c 3
Edition : 07.04.89
Replaces : 4.85
Test oil : ISO-4113

Combination no. : 0 401 846 755

Injection pump
Pump designation : PE6P110A320LS3805
EP type number : 0 411 816 718
Governor
Governor design. : RQ300/1150PA187-8
Governor no. : 0 421 801 180

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 148.0
Rated speed : 2300
2nd version kW : 148.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

K18

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285
Phasing :
Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.40...12.50

Del.quantity cm3/ : 12.9...13.1
100 s: (12.6...13.3)

Spread cm3 : 0.4
100 s: (0.8)

2nd speed rpm : 300.0
Rack travel in mm : 8.7...8.9
Del.quantity cm3/ : 1.6...2.2
100 s: (1.3...2.4)
Spread cm3 : 0.4
100 s: (0.7)

1st speed rpm : 1150
Rack travel in mm : 12.6...12.7
Del.quantity cm3/ : 12.7...12.9*
100 s: (12.4...13.2)
Spread cm3 : 0.4
100 s: (0.8)

2nd speed rpm : 300
Rack travel in mm : 8.50...8.70
Del.quantity cm3/ : 1.6...2.2
100 s: (1.3...2.4)
Spread cm3 : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 650
Rack travel in mm : 13.20...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150

Del.quantity : 129.0...131.0
1000 : (126.5...133.5)
Spread cm3 : 4.00
1000 : (8.00)

2nd version

Speed rpm : 1150
Del.quantity cm3/ : 127.0...129.0
1000 s: (124.0...132.0)
Spread cm3 : 4.00
1000 s: (8.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 650
Rack travel in mm : 13.6

Testing:

1st rack travel in: 11.40
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1350
Speed rpm : 0.00...1.50

2nd version

Setting point:
Speed rpm : 650
Rack travel in mm : 13.6

Testing:

1st rack travel in: 11.60
Speed rpm : 1195...1210
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.1

Testing:

Speed rpm : 100
Minimum rack travel: 8.50
Speed rpm : 300
Rack travel in mm : 7.00...7.20
Rack travel in mm : 2.00
Speed rpm : 400...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

Del.quantity cm3/ : 105.0...109.0
1000 s: (102.0...112.0)
Spread cm3 : 6.00
1000 s: (9.00)

2nd version

Speed rpm : 600
Del.quantity cm3/ : 117.0...121.0
1000 s: (114.0...124.0)
Spread cm3 : 6.00
1000 s: (9.00)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.40
Speed rpm : 1190...1200

2nd version

1mm rack travel less than
full load rack tr: 11.60
Speed rpm : 1195...1210

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

See VDT-I-401/102.

Version 1: Without return-flow
restriction

Version 2: With return-flow restriction

* Version 2

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 q
Edition : 31.03.89
Replaces : 12.6.87
Test oil : ISO-4113

Combination no. : 0 401 846 759

Injection pump
Pump designation : PE6P110A320RS3108Y
EP type number : 0 411 816 729
Governor
Governor design. : RQV250...1100PA649
Governor no. : 0 421 815 346

Customer-spec. information
Customer : VOLVO

Engine : THD100EC

1st version kW : 180.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00

K20

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 13.8...14.0

100 s: (13.5...14.3)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.2...5.4

Del.quantity cm3/ : 3.0...3.4

100 s: (2.7...3.6)

Spread cm3 : 0.3

100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 4.10...4.90

3rd speed rpm : 700

travel mm : 6.30...6.70

4th speed rpm : 950

travel mm : 6.30...6.70

5th speed rpm : 1100

travel mm : 7.00...7.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del.quantity : 138.0...140.0

1000 : (135.0...143.0)

Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:

1st rack travel in: 10.10
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.20...5.40

CONSTANT REGULATION

Speed rpm : 250...425

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.80
2nd pressure hPa : 275
Rack travel in m: 9.90...10.00
3rd pressure hPa : 400
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 105.5...108.5
1000 s: (103.0...111.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 30.0...34.0
1000 s: (27.5...36.5)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 q1
Edition : 07.03.88
Replaces : 12.6.87
Test oil : ISO-4113

Combination no. : 0 401 846 760

Injection pump
Pump designation : PE6P110A32ORS3108X
EP type number : 0 411 816 730
Governor
Governor design. : RQV250...1100PA649
Governor no. : 0 421 813 346

Customer-spec. information
Customer : VOLVO

Engine : THD100ED

1st version kW : 203.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00

K22

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 16.0...16.2

100 s: (15.7...16.5)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 3.0...3.4

100 s: (2.7...3.6)

Spread cm3 : 0.3

100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 4.10...4.90

3rd speed rpm : 700

travel mm : 6.30...6.70

4th speed rpm : 950

travel mm : 6.30...6.70

5th speed rpm : 1100

travel mm : 7.00...7.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del.quantity : 160.0...162.0

1000 : (157.0...165.0)

Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 11.10
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.00...5.20

CONSTANT REGULATION

Speed rpm : 250...425

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.10...12.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.30...9.40
2nd pressure hPa : 275
Rack travel in m: 9.60...9.70
3rd pressure hPa : 650
Rack travel in m: 11.70...11.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 105.5...108.5
1000 s: (103.0...111.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 30.0...34.0
1000 s: (27.5...36.5)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 o 1
 Edition : 07.04.89
 Replaces : 4.85
 Test oil : ISO-4113
 Combination no. : 0 401 846 762
 Injection pump
 Pump designation : PE6P110A32OLS3805-10
 EP type number : 0 411 816 740
 Governor
 Governor design. : RQ300/1000PA187
 Governor no. : 0 421 801 182

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 140.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.50...11.60

Del.quantity cm3/ : 12.0...12.2

100 s: (11.7...12.5)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.0...8.2

Del.quantity cm3/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.00...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 120.5...122.5

1000 : (117.5...125.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 13.5

Testing:

1st rack travel in: 10.60

Speed rpm : 1040...1050

2nd rack travel in: 4.00
Speed rpm : 1075...1105

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.1

Testing:
Speed rpm : 100
Minimum rack trave: 9.50
Speed rpm : 300
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 430...470

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 102.0...106.0
1000 s: (99.0...109.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.60
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 8,0 m 3
 Edition : 09.03.87
 Replaces : 4.85
 Test oil : ISO-4113
 Combination no. : 0 401 846 775
 Injection pump
 Pump designation : PE6P110A72ORS3076
 EP type number : 0 411 816 720
 Governor
 Governor design. : RQ750PA528
 Governor no. : 0 421 801 126

Customer-spec. information
 Customer : SCANIA

Engine : DS8 42

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
 : (3.25...3.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 11.90...12.00
 Del.quantity cm3/ : 11.7...11.9
 100 s: (11.5...12.1)
 Spread cm3 : 0.5
 100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del.quantity : 117.0...119.0
 1000 : (115.0...121.0)
 Spread cm3 : 5.00
 1000 : (7.00)

RATED SPEED

1st version
 Testing:
 1st rack travel in: 10.90
 Speed rpm : 750...755
 2nd rack travel in: 4.00
 Speed rpm : 773...783

BREAKAWAY

1st version
 1mm rack travel less than
 full load rack tr: 10.90
 Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
 Del.quantity cm3/ : 190.0...240.0
 1000 s: (-)
 Rack travel in mm : 20.00...21.00

HIGH IDLE

1st version

Rack travel in mm : 4.90...5.10

Remarks:

:

ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 22, 1983

Engine start of delivery: 18, BTDC

Firing sequence of engine:
1-5-3-6-2-4.

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 r
Edition : 07.04.89
Replaces : 31.7.87
Test oil : ISO-4113

Combination no. : 0 401 846 805

Injection pump
Pump designation : PE6P110A320LS3814-10
EP type number : 0 411 816 741
Governor
Governor design. : RQ300/1150PA187-6
Governor no. : 0 421 801 155

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 159.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.40...12.50

Del.quantity cm3/ : 13.2...13.4

100 s: (12.9...13.6)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.3...8.5

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.0)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.20...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 132.0...134.0

1000 : (129.5...136.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 13.6

Testing:

1st rack travel in: 11.50

Speed rpm : 1190...1200

2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1350
Speed rpm : 0.00...1.50

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.4

Testing:
Speed rpm : 100
Minimum rack trave: 10.00
Speed rpm : 300
Rack travel in mm : 8.30...8.50
Rack travel in mm : 2.00
Speed rpm : 430...470

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 110.0...114.0
1000 s: (107.0...117.0)
Spread cm3 : 6.00
1000 s: (9.00)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:
: KÄBOHRER

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,1 a
 Edition : 07.04.89
 Replaces : 12.9.86
 Test oil : ISO-4113
 Combination no. : 0 401 846 813
 Injection pump
 Pump designation : PE6P120A320RS3165
 EP type number : 0 411 826 747
 Governor
 Governor design. : RGV300...1050PA657-2
 Governor no. : 0 421 813 419

Customer-spec. information
 Customer : VOLVO/B

Engine : TD121K

1st version kW : 228.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 21.7...21.9

100 s: (21.4...22.2)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.5...4.7

Del.quantity cm3/ : 1.7...2.1

100 s: (1.4...2.4)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.60...1.80

2nd speed rpm : 450
 travel mm : 3.60...4.00

3rd speed rpm : 700
 travel mm : 6.40...6.60

4th speed rpm : 950
 travel mm : 6.40...6.60

5th speed rpm : 1110
 travel mm : 7.80...8.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000

Del.quantity : 217.0...219.0
1000 : (214.0...222.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 58...66

Testing:
1st rack travel in: 11.30
Speed rpm : 1105...1115
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 7...15

Testing:
Speed rpm : 100
Minimum rack travel: 6.10
Speed rpm : 300
Rack travel in mm : 4.50...4.70

CONSTANT REGULATION
Speed rpm : 300...420

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 12.30...12.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 125
Rack travel in m: 8.90...9.00
3rd pressure hPa : 655
Rack travel in m: 11.90...12.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1000
Del.quantity cm3/ : 217.0...223.0
1000 s: (215.0...225.0)

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...270.0
1000 s: (236.0...274.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.50...4.70
Del.quantity cm3/ : 17.0...21.0
1000 s: (14.5...24.5)
Spread cm3 : 4.00
1000 s: (7.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s
 Edition : 07.04.89
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 401 846 823

Injection pump
 Pump designation : PE6P110A320LS3835
 EP type number : 0 411 816 749
 Governor
 Governor design. : RQ300/900PA187-14
 Governor no. : 0 421 801 357

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 150.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.0...8.2

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.20...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 126.0...128.0

1000 : (123.5...130.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 13.6

Testing:

1st rack travel in: 11.50

Speed rpm : 940...950

2nd rack travel in: 4.00
Speed rpm : 985...1015
4th rack travel in: 1100
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.1

Testing:

Speed rpm : 100
Minimum rack travel: 9.30
Speed rpm : 300
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 430...470

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm³/ : 124.0...128.0
1000 s: (121.0...131.0)
Spread cm³ : 6.00
1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 a
 Edition : 31.03.89
 Replaces : 7.1.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 827
 Injection pump
 Pump designation : PE6P120A32ORS3178
 EP type number : 0 411 826 752
 Governor
 Governor design. : RQV250...950PA657-11
 Governor no. : 0 421 813 568

Customer-spec. information
 Customer : VOLVO

Engine : TD122F

1st version kW : 257.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.00...13.10

Del.quantity cm3/ : 22.9...23.1

100 s: (22.6...23.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 4.6...4.8

Del.quantity cm3/ : 1.7...2.2

100 s: (1.4...2.5)

Spread cm3 : 0.5

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 450
 travel mm : 3.60...4.20

3rd speed rpm : 700
 travel mm : 6.40...6.60

4th speed rpm : 985
 travel mm : 8.20...8.40

5th speed rpm : 1060
 travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1000

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del.quantity : 229.0...231.0
1000 : (226.0...234.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 60...68

Testing:

1st rack travel in: 12.00
Speed rpm : 980...990
2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 5...13

Testing:

Speed rpm : 100
Minimum rack trave: 6.20
Speed rpm : 250
Rack travel in mm : 4.60...4.80

CONSTANT REGULATION

Speed rpm : 250...380

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.00...13.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 100
Rack travel in m: 10.20...10.30
3rd pressure hPa : 570
Rack travel in m: 12.70...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 163.0...165.0
1000 s: (160.0...168.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 980...990

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 220.0...260.0
1000 s: (216.0...264.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.60...4.80
Del.quantity cm3/ : 17.5...22.5
1000 s: (14.5...25.5)
Spread cm3 : 5.00
1000 s: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 13,8 h1
 Edition : 23.06.89
 Replaces : 7.12.87
 Test oil : ISO-4113
 Combination no. : 0 401 846 844
 Injection pump
 Pump designation : PE6P120A720RS3069
 EP type number : 0 411 826 712
 Governor
 Governor design. : RQ300/1000PA502-1
 Governor no. : 0 421 801 388

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8210.22.371

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test Lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00

L08

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 20.5...20.7

100 s: (20.2...21.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 6.0...6.4

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 700

Del.quantity : 205.0...207.0

1000 : (202.0...210.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.40

Speed rpm : 1045...1060

2nd rack travel in: 4.00

Speed rpm : 1135...1165

4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack travel: 7.70
Speed rpm : 300
Rack travel in mm : 6.00...6.40
Rack travel in mm : 2.00
Speed rpm : 360...400

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.00...13.10
2nd speed rpm : 600
Rack travel in m: 13.00...13.20

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.70...9.90
2nd pressure hPa : 280
Rack travel in m: 11.80...11.90
3rd pressure hPa : 220
Rack travel in m: 10.40...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 500
Del.quantity cm3/ : 211.0...217.0
1000 s: (208.0...220.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 131.0...133.0
1000 s: (128.0...136.0)

BREAKAWAY

L09

1st version
1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 c
 Edition : 17.02.89
 Replaces : 5.8.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 860
 Injection pump
 Pump designation : PE6P120A320RS3200
 EP type number : 0 411 826 766
 Governor
 Governor design. : RQV250...1000PA808-1
 Governor no. : 0 421 813 660

Customer-spec. information
 Customer : ENASA

Engine : 96 R1 BX

1st version kw : 265.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 11.90...12.00

Del.quantity cm3/ : 24.9...25.1

100 s: (24.6...25.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 3.3...3.7
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)

Spread cm3 : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40
 2nd speed rpm : 350
 travel mm : 2.10...2.60
 3rd speed rpm : 700
 travel mm : 4.70...5.30
 4th speed rpm : 1055
 travel mm : 7.90...8.10
 5th speed rpm : 1145
 travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1100
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 1200

Del.quantity : 249.0...251.0
1000 : (246.0...254.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:
1st rack travel in: 10.90
Speed rpm : 1050...1060
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack trave: 5.00
Speed rpm : 250
Rack travel in mm : 3.30...3.70

CONSTANT REGULATION
Speed rpm : 250...330

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 11.90...12.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.90
2nd pressure hPa : 680
Rack travel in m: 11.30...11.40
3rd pressure hPa : 420
Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 900
Del.quantity cm3/ : 244.0...250.0
1000 s: (241.0...253.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 149.0...152.0
1000 s: (146.5...154.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.90
Speed rpm : 1050...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 155.0...175.0
1000 s: (151.0...179.0)
Rack travel in mm : 19.50...21.00

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 e
 Edition : 17.02.89
 Replaces : 11.7.88
 Test oil : ISO-4113

Combination no. : 0 401 846 861

Injection pump
 Pump designation : PE6P120A320RS3176-1
 EP type number : 0 411 826 767
 Governor
 Governor design. : RQV250...1050PA808
 Governor no. : 0 421 813 553

Customer-spec. information
 Customer : ENASA

Engine : 96 R1 AX

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 12.40...12.50

Del.quantity cm3/ : 21.2...21.4

100 s: (20.9...21.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 4.2...4.4

Del.quantity cm3/ : 2.5...3.1

100 s: (2.2...3.4)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 350

travel mm : 2.10...2.60

3rd speed rpm : 700

travel mm : 4.50...5.10

4th speed rpm : 1095

travel mm : 8.00...8.20

5th speed rpm : 1200

travel mm : 9.20...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1180

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 900

Del.quantity : 212.0...214.0

1000 : (209.0...217.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:
1st rack travel in: 11.40
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 250
Rack travel in mm : 4.20...4.40

CONSTANT REGULATION
Speed rpm : 250...350

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.40...12.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.90...10.30
2nd pressure hPa : 390
Rack travel in m: 11.90...12.00
3rd pressure hPa : 160
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1030
Del.quantity cm3/ : 215.0...221.0
1000 s: (212.0...224.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 151.0...153.0
1000 s: (148.0...156.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.40
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 155.0...175.0
1000 s: (151.0...179.0)
Rack travel in mm : 19.50...21.00

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 d7
Edition : 11.05.89
Replaces : 11.11.88
Test oil : ISO-4113

Combination no. : 0 401 846 873

Injection pump
Pump designation : PE6P120A32ORS3183Y
EP type number : 0 411 826 778
Governor
Governor design. : RQ250/1000PA832
Governor no. : 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 282

1st version kW : 282.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm3/ : 22.8...23.0

100 s: (22.5...23.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 228.0...230.0

1000 : (225.0...233.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 12.40

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack trave: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 13.70...13.80
2nd speed rpm : 1000
Rack travel in m: 13.60...13.80

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 13.40...13.50

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.20...10.40
2nd pressure hPa : 520
Rack travel in m: 12.60...12.70
3rd pressure hPa : 280
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 d8
 Edition : 11.05.89
 Replaces : 7.3.88
 Test oil : ISO-4113

Combination no. : 0 401 846 874

Injection pump
 Pump designation : PE6P120A320RS3183
 EP type number : 0 411 826 754
 Governor
 Governor design. : RQ250/1000PA832
 Governor no. : 0 421 801 368

Customer-spec. information

Customer : DAF

Engine : WS 259

1st version kW : 259.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test Lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 21.3...21.5

100 s: (21.0...21.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 213.0...215.0

1000 : (210.0...218.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.80

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1125...1155
4th rack travel in: 1250
Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 13.10...13.20
2nd speed rpm : 1000
Rack travel in m: 13.00...13.20

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.80...12.90

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 10.20...10.40

2nd pressure hPa : 460

Rack travel in m: 12.20...12.30

3rd pressure hPa : 250

Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm3/ : 145.0...147.0

1000 s: (142.0...150.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 e8
 Edition : 11.05.89
 Replaces : 7.3.88
 Test oil : ISO-4113

Combination no. : 0 401 846 875

Injection pump
 Pump designation : PE6P120A320RS3183Y
 EP type number : 0 411 826 778
 Governor
 Governor design. : RQV250...1000PA851
 Governor no. : 0 421 813 604

Customer-spec. information
 Customer : DAF

Engine : WS 282

1st version kW : 282.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 13.40...13.50

Del.quantity cm3/ : 22.8...23.0

100 s: (22.5...23.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.40...1.60

2nd speed rpm : 400

travel mm : 3.20...3.60

3rd speed rpm : 800

travel mm : 5.80...6.20

4th speed rpm : 1000

travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 228.0...230.0

1000 : (225.0...233.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:

1st rack travel in: 12.40
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.40

LOW IDLE 1

Control lever
position degrees: 16...24

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00

CONSTANT REGULATION

Speed rpm : 275...385

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 13.40...13.50

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.20...10.40
2nd pressure hPa : 520
Rack travel in m: 12.60...12.70
3rd pressure hPa : 280
Rack travel in m: 11.00...11.20

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 145.0...147.0
1000 s: (142.0...150.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.40
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 e9
 Edition : 11.05.89
 Replaces : 9.12.88
 Test oil : ISO-4113

Combination no. : 0 401 846 876

Injection pump
 Pump designation : PE6P120A32ORS3183Z
 EP type number : 0 411 826 777
 Governor
 Governor design. : RQV250...1000PA851-1
 Governor no. : 0 421 813 605

Customer-spec. information
 Customer : DAF

Engine : WS 225

1st version kW : 225.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 19.9...20.1

100 s: (19.6...20.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.40...1.60

2nd speed rpm : 400

travel mm : 3.20...3.60

3rd speed rpm : 800

travel mm : 5.80...6.20

4th speed rpm : 1000

travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 199.0...201.0

1000 : (196.0...204.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 11.10

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1120...1150

4th rack travel in: 1250

Speed rpm : 0.00...1.40

LOW IDLE 1

Control lever

position degrees: 16...24

Testing:

Speed rpm : 100

Minimum rack travel: 8.30

Speed rpm : 250

Rack travel in mm : 6.60...7.00

CONSTANT REGULATION

Speed rpm : 275...385

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 1000

Rack travel mm : 12.10...12.20

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 10.30...10.50

2nd pressure hPa : 370

Rack travel in m: 11.70...11.80

3rd pressure hPa : 240

Rack travel in m: 10.80...11.00

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm3/ : 147.0...149.0

1000 s: (144.0...152.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 260.0...300.0

1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.60...7.00

Del.quantity cm3/ : 14.0...20.0

1000 s: (11.0...23.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 e7
 Edition : 11.05.89
 Replaces : 7.3.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 877
 Injection pump
 Pump designation : PE6P120A320RS3183
 EP type number : 0 411 826 754
 Governor
 Governor design. : RQV250...1000PA851-2
 Governor no. : 0 421 813 606

Customer-spec. information
 Customer : DAF

Engine : WS 259

1st version kW : 259.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 21.3...21.5

100 s: (21.0...21.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.40...1.60

2nd speed rpm : 400

travel mm : 3.20...3.60

3rd speed rpm : 800

travel mm : 5.80...6.20

4th speed rpm : 1000

travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 213.0...215.0

1000 : (210.0...218.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 51...59

Testing:

1st rack travel in: 11.80

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1120...1150

4th rack travel in: 1250

Speed rpm : 0.00...1.40

LOW IDLE 1

Control lever

position degrees: 16...24

Testing:

Speed rpm : 100

Minimum rack travel: 8.30

Speed rpm : 250

Rack travel in mm : 6.60...7.00

CONSTANT REGULATION

Speed rpm : 275...385

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 1000

Rack travel mm : 12.80...12.90

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 10.20...10.40

2nd pressure hPa : 460

Rack travel in m: 12.20...12.30

3rd pressure hPa : 250

Rack travel in m: 10.80...11.00

START CUT-OUT

Speed 1/min : 200 (0)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm³/ : 145.0...147.0

1000 s: (142.0...150.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 260.0...300.0

1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.60...7.00

Del.quantity cm³/ : 14.0...20.0

1000 s: (11.0...23.0)

Spread cm³ : 8.00

1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,9 d9
 Edition : 11.05.89
 Replaces : 7.3.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 878
 Injection pump
 Pump designation : PE6P120A320RS3183Z
 EP type number : 0 411 826 777
 Governor
 Governor design. : RQ250/1000PA832-1
 Governor no. : 0 421 801 387

Customer-spec. information
 Customer : DAF

Engine : WS 225

1st version kw : 225.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 19.9...20.1

100 s: (19.6...20.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...7.0

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 199.0...201.0

1000 : (196.0...204.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.10

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1120...1150
4th rack travel in: 1250
Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8

Testing:

Speed rpm : 100
Minimum rack travel: 8.30
Speed rpm : 250
Rack travel in mm : 6.60...7.00
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 12.40...12.50
2nd speed rpm : 1000
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.10...12.20

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 370
Rack travel in m: 11.70...11.80
3rd pressure hPa : 240
Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 147.0...149.0
1000 s: (144.0...152.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.60...7.00
Del.quantity cm³/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : UNI 13,8 c1
Edition : 29.03.89
Replaces : 16.6.88
Test oil : ISO-4113
Combination no. : 0 401 846 879
Injection pump
Pump designation : PE6P120A72ORS3192
EP type number : 0 411 826 761
Governor
Governor design. : RQV300...900PA857-1
Governor no. : 0 421 813 683

Customer-spec. information
Customer : IVECO-UNIC

Engine : 8210.42.101

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50
: (3.35...3.55)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 13.10...13.20

Del.quantity cm3/ : 23.6...23.8

100 s: (23.3...24.1)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.8...2.4

100 s: (1.5...2.7)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.70...0.90

2nd speed rpm : 550

travel mm : 4.00...4.60

3rd speed rpm : 800

travel mm : 6.60...6.90

4th speed rpm : 900

travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 950

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Aneroid pressure h: 900

Del.quantity : 236.0...238.0

1000 : (233.0...241.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 57...65

Testing:
1st rack travel in: 12.10
Speed rpm : 940...950
2nd rack travel in: 4.00
Speed rpm : 1060...1090
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 4...12

Testing:
Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 300
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION
Speed rpm : 370...490

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.20...13.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.10...9.30
2nd pressure hPa : 520
Rack travel in m: 12.20...12.30
3rd pressure hPa : 330
Rack travel in m: 9.80...10.20

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 500
Del.quantity cm³/ : 230.0...236.0
1000 s: (227.0...239.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 111.0...113.0
1000 s: (108.0...116.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 235.0...265.0
1000 s: (231.0...269.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.90...5.10
Del.quantity cm³/ : 18.0...24.0
1000 s: (15.0...27.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s 9
 Edition : 07.04.89
 Replaces : 24.6.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 880
 Injection pump
 Pump designation : PE6P110A320LS3835-1
 EP type number : 0 411 816 755
 Governor
 Governor design. : RQ300/1050PA187-19
 Governor no. : 0 421 801 428

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness : 6.00X1.50X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 13.00...13.10

Del.quantity cm3/ : 12.6...12.8

100 s: (12.2...13.0)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.3...8.6

Del.quantity cm3/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.80...14.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 126.0...128.0

1000 : (122.5...130.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 14.1

Testing:

1st rack travel in: 12.00

Speed rpm : 1090...1100

2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1300
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.0

Testing:

Speed rpm : 200
Minimum rack trave: 8.70
Speed rpm : 300
Rack travel in mm : 6.80...7.20
Rack travel in mm : 2.00
Speed rpm : 400...440

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
2nd speed rpm : 600
3rd speed rpm : 900

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del.quantity cm3/ : 138.0...142.0
1000 s: (135.0...145.0)
Spread cm3 : 7.00
1000 s: (10.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s10
 Edition : 11.05.89
 Replaces : 16.12.88
 Test oil : ISO-4113

Combination no. : 0 401 846 881

Injection pump
 Pump designation : PE6P110A32OLS3835-1
 EP type number : 0 411 816 755
 Governor
 Governor design. : RQV300..1050PA884
 Governor no. : 0 421 813 685

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM441

1st version kW : 160.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 13.00...13.10

Del.quantity cm3/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.3...8.6

Del.quantity cm3/ : 1.5...2.1
 100 s: (1.2...2.3)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.30

2nd speed rpm : 500
 travel mm : 3.70...4.00

3rd speed rpm : 800
 travel mm : 5.80...6.10

4th speed rpm : 1090
 travel mm : 8.10...8.50

5th speed rpm : 1170
 travel mm : 9.50...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 126.0...128.0
1000 : (123.5...130.5)
Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 53...61

Testing:

1st rack travel in: 12.00
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1160...1190
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 18...26

Testing:

Speed rpm : 200
Minimum rack trave: 10.30
Speed rpm : 300
Rack travel in mm : 8.80...9.00

CONSTANT REGULATION

Speed rpm : 300...550

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1050
Del.quantity cm3/ : 138.0...142.0
1000 s: (135.0...145.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

M03

Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

APPLICATION :

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SSC 10,5 e
 Edition : 07.02.89
 Replaces : 5.8.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 884
 Injection pump
 Pump designation : PE6P130A320LS3210
 EP type number : 0 411 836 713
 Governor
 Governor design. : RQV400...750PA607
 Governor no. : 0 421 813 313

Customer-spec. information
 Customer : SSCM

Engine : UD 25.L6

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

MO4

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.50...14.60

Del.quantity cm3/ : 38.8...39.1

100 s: (38.4...39.4)

Spread cm3 : 0.6

100 s: (1.0)

2nd speed rpm : 400.0

Rack travel in mm : 5.4...5.6

Del.quantity cm3/ : 2.7...3.3

100 s: (2.3...3.7)

Spread cm3 : 1.0

100 s: (1.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 400

travel mm : 0.20...0.50

2nd speed rpm : 500

travel mm : 1.90...2.10

3rd speed rpm : 650

travel mm : 1.90...2.10

4th speed rpm : 750

travel mm : 4.50...5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 388.0...391.0

1000 : (384.5...394.5)

Spread cm3 : 6.00

1000 : (10.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 13.50

Speed rpm : 750...755

2nd rack travel in: 4.00
Speed rpm : 776...789
4th rack travel in: 950
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 400
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 650...750

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.50
Speed rpm : 750...755

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 27.0...33.0
1000 s: (23.0...37.0)
Spread cm3 : 10.00
1000 s: (14.00)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s11
 Edition : 07.02.89
 Replaces : 9.1.89
 Test oil : ISO-4113

Combination no. : 0 401 846 889

Injection pump
 Pump designation : PE6P110A320LS3835-1
 EP type number : 0 411 816 755
 Governor
 Governor design. : RQV300...900PA524-10
 Governor no. : 0 421 813 549

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 441

1st version kW : 150.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.90...13.00

Del.quantity cm3/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.7...8.9

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.20...1.40

2nd speed rpm : 500
 travel mm : 3.50...3.80

3rd speed rpm : 950
 travel mm : 8.30...8.70

4th speed rpm : 1000
 travel mm : 9.40...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 950

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 126.0...128.0

1000 : (123.5...130.5)

Spread cm3 : 4.00
1000 : (8.00)

Remarks:

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 11.90
Speed rpm : 955...965
2nd rack travel in: 4.00
Speed rpm : 1000...1030
4th rack travel in: 1100
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 17...25

Testing:
Speed rpm : 200
Minimum rack travel: 9.50
Speed rpm : 300
Rack travel in mm : 8.00...8.20

CONSTANT REGULATION
Speed rpm : 300...450

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del. quantity cm3/ : 122.0...126.0
1000 s: (119.0...129.0)
Spread cm3 : 6.00
1000 s: (8.)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 955...965

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

M07

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : UNI 13,8 f
 Edition : 23.06.89
 Replaces : 9.1.89
 Test oil : ISO-4113

Combination no. : 0 401 846 891

Injection pump
 Pump designation : PE6P120A72ORS3216
 EP type number : 0 411 826 781
 Governor
 Governor design. : RQV300...975PA898K
 Governor no. : 0 421 815 197

Customer-spec. information
 Customer : IVECO-UNIC

Engine : 8210.42.269

1st version kW : 261.0
 Rated speed : 1950

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 975

Rack travel in mm : 13.10...13.20

Del. quantity cm³/ : 24.1...24.3

100 s: (23.8...24.6)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.3...5.5

Del. quantity cm³/ : 2.4...3.0

100 s: (2.1...3.3)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.60...2.00

2nd speed rpm : 400
 travel mm : 3.20...4.00

3rd speed rpm : 750
 travel mm : 6.70...7.10

4th speed rpm : 975
 travel mm : 9.60...9.80

5th speed rpm : 1200
 travel mm : 13.00...14.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1015

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 975

Aneroid pressure h: 1200

Del.quantity : 241.0...243.0
1000 : (238.0...246.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 53...61

Testing:

1st rack travel in: 12.10
Speed rpm : 1015...1025
2nd rack travel in: 4.00
Speed rpm : 1085...1115
4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 11...19

Testing:

Speed rpm : 100
Minimum rack travel: 6.90
Speed rpm : 300
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

Speed rpm : 280...400

TORQUE CONTROL

Dimension a mm : 1.70
Torque control curve - 1st version
1st speed rpm : 975
Rack travel in m: 13.10...13.20
2nd speed rpm : 830
Rack travel in m: 12.70...12.80
3rd speed rpm : 600
Rack travel in m: 11.80...12.10
4th speed rpm : 350
Rack travel in m: 11.40...11.60

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 975
Pressure hPa : 1200
Rack travel mm : 13.10...13.20

Measurement

Speed 1/min : 975

1st pressure hPa : -
Rack travel in m: 8.80...9.00
2nd pressure hPa : 700

M09

Rack travel in m: 12.00...12.10
3rd pressure hPa : 400
Rack travel in m: 10.10...10.50

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 350
Del.quantity cm3/ : 169.0...175.0
1000 s: (166.0...178.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 111.0...113.0
1000 s: (108.0...116.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1015...1025

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 200.0...220.0
1000 s: (196.0...224.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : BA0 7,1 a
Edition : 29.03.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 892
Injection pump
Pump designation : PE6P110A32ORS3219
EP type number : 0 411 816 759
Governor
Governor design. : RQV325...1500PA901
Governor no. : 0 421 813 719

Customer-spec. information
Customer : BAUDOUIN

Engine : 6F12 SR-SRY

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 40...45
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 105

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
: (3.55...3.75)
Rack travel in mm : 9.00...12.00

M10

Firing order : 1- 4- 3- 6- 5- 2

Phasing : 0-75-120-195-240-315

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700
Rack travel in mm : 14.30...14.40
Del. quantity cm³/ : 21.7...22.0
100 s : (21.4...22.2)
Spread cm³ : 0.4
100 s : (0.7)

2nd speed rpm : 325.0
Rack travel in mm : 5.1...5.3
Del. quantity cm³/ : 2.2...2.7
100 s : (1.9...2.9)
Spread cm³ : 0.4
100 s : (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
travel mm : 1.00...1.40
2nd speed rpm : 1100
travel mm : 4.60...5.00
3rd speed rpm : 1500
travel mm : 7.60...7.80

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1650
Rack travel in mm : 7.50...10.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Aneroid pressure h: 900
Del. quantity : 217.0...220.0
1000 : (214.5...222.5)
Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:
1st rack travel in: 13.30
Speed rpm : 1540...1550
2nd rack travel in: 4.00
Speed rpm : 1680...1710
4th rack travel in: 1800
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 12...20

Testing:
Speed rpm : 100
Minimum rack trave: 6.70
Speed rpm : 325
Rack travel in mm : 5.10...5.30

CONSTANT REGULATION
Speed rpm : 370...480

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 14.30...14.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 13.30...13.40
2nd pressure hPa : 300
Rack travel in m: 13.60...13.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1500
Del.quantity cm3/ : 201.0...208.0
1000 s: (198.5...210.5)
Spread cm3 : 8.00
1000 s: (11.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 190.0...194.0
1000 s: (187.5...196.5)

BREAKAWAY

M11

1st version
1mm rack travel less than

full load rack tr: 13.30
Speed rpm : 1540...1550

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100

LOW IDLE

Speed rpm : 325
Rack travel in mm : 5.10...5.30
Del.quantity cm3/ : 22.0...27.0
1000 s: (19.5...29.5)
Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

APPLICATION

Special-purpose vehicle

Note remarks

Combination no. : 0 401 846 897

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 441 A

```
1st version kW      : 191.0
Rated speed         : 2100
```

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

Test pressure, bar: 25...27

```
Prestroke mm      : 3.60...3.70
                   : (3.55...3.75)
```

```

Rack travel in mm : 9.00...12.00
Firing order      : 6- 3- 5- 2- 4- 1

```

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 6

1st speed rpm : 600

Rack travel in mm : 12.30...12.50

Del.quantity cm3/ : 19.0...19.2

100 s: (18.7...19.5)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.1...5.4

Del.quantity cm3/ : 1.4...2.2
100 s: (1.1...2.5)

Spread
cm³ : 0.8
100 s: (1.2)

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

1st version

Speed rpm : 600

Aneroid pressure h: 700

```
Del.quantity      : 190.0...192.0
      1000        : (187.0...195.0)
```

Spread cm3 : 5.00
 1000 : (9.00)

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 10.70
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1165...1195
4th rack travel in: 1250
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack travel: 6.60
Speed rpm : 300
Rack travel in mm : 5.10...5.40
Rack travel in mm : 2.00
Speed rpm : 365...405

TORQUE CONTROL

Dimension a mm : 0.90
2nd speed rpm : 1050
Rack travel in m: 11.70...11.90
3rd speed rpm : 700
Rack travel in m: 12.70...12.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 12.30...12.50

Measurement

Speed 1/min : 600

1st pressure hPa : 350
Rack travel in m: 10.30...10.50
2nd pressure hPa : 550
Rack travel in m: 11.90...12.10
3rd pressure hPa : 780
Rack travel in m: 12.40...12.50 *
4th pressure hPa : 1100
Rack travel in m: 12.65...12.75
5th pressure hPa : -
Rack travel in m: 9.60...9.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1100
Speed rpm : 1050
Del.quantity cm3/ : 184.0...187.0
1000 s: (181.0...190.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 1100
Speed rpm : 700
Del.quantity cm3/ : 204.0...208.0
1000 s: (201.0...211.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 129.0...131.0
1000 s: (126.0...134.0)
Spread cm3 : 8.00
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

Remarks:

* Increase in control-rod travel with
respect to setting at least 0.1 mm

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 p
 Edition : 11.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 898
 Injection pump
 Pump designation : PE6P110A72ORS3225
 EP type number : 0 411 816 763
 Governor
 Governor design. : RQV250...1200PA910
 Governor no. : 0 421 813 746

Customer-spec. information
 Customer : DAF

Engine : HS 200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.4...12.6

100 s: (12.1...12.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 1.4...1.9

100 s: (1.1...2.1)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 450
 travel mm : 2.90...3.30

3rd speed rpm : 800
 travel mm : 4.70...5.10

4th speed rpm : 1200
 travel mm : 7.80...8.00

5th speed rpm : 1500
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1245

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 124.0...126.0

1000 : (121.5...128.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever
position degrees: 50...58

Testing:

1st rack travel in: 11.50
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1345...1375
4th rack travel in: 1450
Speed rpm : 0.00...1.40

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.20...5.40

CONSTANT REGULATION

Speed rpm : 280...400

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.50...11.60
2nd pressure hPa : 350
Rack travel in m: 12.10...12.20
3rd pressure hPa : 300
Rack travel in m: 11.80...12.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600
Del.quantity cm3/ : 98.5...100.5
1000 s: (96.0...103.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50

M15

Speed rpm : 1240...1250

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.20...5.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 p 1
 Edition : 11.05.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 899
 Injection pump
 Pump designation : PE6P110A72ORS3225
 EP type number : 0 411 816 763
 Governor
 Governor design. : RQ250/1200PA913
 Governor no. : 0 421 801 477

Customer-spec. information
 Customer : DAF

Engine : HS 200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.4...12.6

100 s: (12.1...12.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 1.4...1.9

100 s: (1.1...2.1)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 124.0...126.0

1000 : (121.5...128.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.50

Speed rpm : 1235...1250

2nd rack travel in: 4.00

Speed rpm : 1325...1355

4th rack travel in: 1450

Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250
Rack travel in mm : 5.3

Remarks:

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.80...12.90
2nd speed rpm : 1200
Rack travel in m: 12.70...12.90

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.50...11.60
2nd pressure hPa : 350
Rack travel in m: 12.10...12.20
3rd pressure hPa : 300
Rack travel in m: 11.80...12.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600
Del.quantity cm³/ : 98.5...100.5
1000 s: (96.0...103.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1235...1250

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.20...5.40

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 a2
Edition : 07.07.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 904

Injection pump
Pump designation : PE6P120A320RS3165
EP type number : 0 411 826 747
Governor
Governor design. : RQV300...1050PA657-
28
Governor no. : 0 421 813 753

Customer-spec. information
Customer : VME

Engine : TD122KC;KE

1st version kW : 276.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
: (2.55...2.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 14.10...14.20

Del.quantity cm3/ : 26.3...26.5

100 s: (26.0...26.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 3.8...4.0

Del.quantity cm3/ : 1.7...2.1

100 s: (1.4...2.4)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.60...1.90

2nd speed rpm : 450

travel mm : 3.60...4.00

3rd speed rpm : 750

travel mm : 6.30...6.70

4th speed rpm : 1110

travel mm : 8.10...8.30

5th speed rpm : 1200

travel mm : 9.70...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1140

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000
Del.quantity : 263.0...265.0
1000 : (260.0...268.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 13.10
Speed rpm : 1105...1115
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 6...14

Testing:
Speed rpm : 100
Minimum rack travel: 5.40
Speed rpm : 300
Rack travel in mm : 3.80...4.00

CONSTANT REGULATION
Speed rpm : 300...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 14.10...14.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.40...11.60
2nd pressure hPa : 120
Rack travel in m: 11.80...11.90
3rd pressure hPa : ?
Rack travel in m: 13.70...13.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1000

Del.quantity cm3/ : 249.0...255.0
1000 s: (246.0...258.0)
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 184.0...186.0
1000 s: (181.0...189.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 13.10
Speed rpm : 1105...1115

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...270.0
1000 s: (236.0...274.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 3.80...4.00
Del.quantity cm3/ : 17.0...21.0
1000 s: (14.5...24.5)
Spread cm3 : 4.00
1000 s: (7.00)

Remarks:

:
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 p 2
 Edition : 28.06.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 905
 Injection pump
 Pump designation : PE6P110A72ORS3225-1
 EP type number : 0 411 816 762
 Governor
 Governor design. : RQ250/1200PA913
 Governor no. : 0 421 801 477

Customer-spec. information
 Customer : DAF

Engine : HT 168

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 10.8...11.1

100 s: (10.6...11.4)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 1.4...1.9

100 s: (1.1...2.1)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 108.5...111.5

1000 : (106.0...114.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 10.70

Speed rpm : 1235...1250

2nd rack travel in: 4.00

Speed rpm : 1310...1340

4th rack travel in: 1400

Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250
Rack travel in mm : 5.3

Remarks:

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.90...12.00
2nd speed rpm : 1200
Rack travel in m: 11.80...12.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 11.60...11.70

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.70...10.80
2nd pressure hPa : 350
Rack travel in m: 11.00...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 80.5...82.5
1000 s: (78.0...85.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1235...1250

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.20...5.40

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 p 3
 Edition : 23.06.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 906
 Injection pump
 Pump designation : PE6P110A72ORS3225-1
 EP type number : 0 411 816 762
 Governor
 Governor design. : RQV250...1200PA910
 Governor no. : 0 421 813 746

Customer-spec. information
 Customer : DAF

Engine : HT 200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 10.8...11.1

100 s: (10.6...11.4)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 1.4...1.9

100 s: (1.1...2.1)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 450

travel mm : 2.90...3.30

3rd speed rpm : 800

travel mm : 4.70...5.10

4th speed rpm : 1200

travel mm : 7.80...8.00

5th speed rpm : 1500

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1235

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 108.5...111.5

1000 : (106.0...114.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever
position degrees: 50...58

Testing:
1st rack travel in: 10.70
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1315...1345
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 13...21

Testing:
Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.20...5.40

CONSTANT REGULATION
Speed rpm : 280...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 11.60...11.70

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.70...10.80
2nd pressure hPa : 350
Rack travel in m: 11.00...11.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm³/ : 80.5...82.5
1000 s: (78.0...85.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1240...1250

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LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.20...5.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 L 5
 Edition : 03.07.89
 Replaces : -8
 Test oil : ISO-4113

Combination no. : 0 401 846 907

Injection pump
 Pump designation : PE6P120A32OLS3815-13
 EP type number : 0 411 826 782
 Governor
 Governor design. : RQ350..1050PA925
 Governor no. : 0 421 801 764

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 441 A

1st version kW : 191.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 18.8...19.0

100 s: (18.5...19.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 5.6...5.9

Del.quantity cm3/ : 1.4...2.2

100 s: (1.1...2.5)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1080

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h: 900

Del.quantity : 188.0...190.0

1000 : (185.0...193.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 1080

Rack travel in mm : 16.5

Testing:
1st rack travel in: 11.80
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.6

Testing:
Speed rpm : 250
Minimum rack travel: 8.00
Speed rpm : 350
Rack travel in mm : 5.50...5.80

CONSTANT REGULATION
Speed rpm : 350...550

TORQUE CONTROL
Dimension a mm : 1.30
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 12.70...12.90
2nd speed rpm : 950
Rack travel in m: 13.40...13.60
3rd speed rpm : 850
Rack travel in m: 14.00...14.10

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.50...10.81

Measurement
Speed 1/min : 500

1st pressure hPa : 400
Rack travel in m: 0.80...1.00
2nd pressure hPa : 600
Rack travel in m: 2.40...2.60

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900

M25

Speed rpm : 800
Del.quantity cm3/ : 211.0...215.0
1000 s: (208.0...218.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 900
Speed rpm : 1050
Del.quantity cm3/ : 155.0...157.0 *
1000 s: (152.0...160.0)
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 127.0...129.0
1000 s: (124.0...132.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

Remarks: .
:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 s17
 Edition : 23.06.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 909
 Injection pump
 Pump designation : PE6P110A320LS3835-2
 EP type number : 0 411 816 761
 Governor
 Governor design. : RQV350...1050PA378-10
 Governor no. : 0 421 813 765
 Customer-spec. information
 Customer : DAIMLER-BENZ
 Engine : OM 441
 1st version kW : 160.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Overflow
 quantity min. 1/h: 100...120
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175
 Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.90...13.00

Del.quantity cm3/ : 13.8...14.0

100 s: (13.5...14.2)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.8

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.0)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 3.50...3.80

3rd speed rpm : 1100

travel mm : 8.00...8.50

4th speed rpm : 1150

travel mm : 9.20...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1080

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 138.0...140.0

1000 : (135.5...142.5)

Spread cm3 : 4.00
1000 : (8.00)

Remarks:

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 11.90
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1135...1165
4th rack travel in: 1100
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 200
Minimum rack travel: 8.00
Speed rpm : 350
Rack travel in mm : 6.40...6.80

CONSTANT REGULATION
Speed rpm : 350...550

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 750
Del.quantity cm3/ : 125.0...129.0
1000 s: (122.0...132.0)
Spread cm3 : 6.00
1000 s: (8.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.90
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 14,5 a
 Edition : 29.03.89
 Replaces : 11.12.87
 Test oil : ISO-4113

Combination no. : 0 401 848 082

Injection pump
 Pump designation : PE8P110A520/5LS851
 EP type number : 0 411 818 046
 Governor
 Governor design. : RQ250/1150PA688
 Governor no. : 0 421 801 231

Customer-spec. information
 Customer : MAN

Engine : D2848T

1st version kW : 245.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

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Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.80...10.90

Del.quantity cm3/ : 14.3...14.5

100 s: (14.0...14.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.8...2.4

100 s: (1.5...2.6)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1000

Del.quantity : 143.0...145.0

1000 : (140.5...147.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.80

Speed rpm : 1195...1210

2nd rack travel in: 4.00

Speed rpm : 1280...1310
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 6.50
Speed rpm : 250
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 310...350

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.80...10.90
2nd speed rpm : 700
Rack travel in m: 10.80...11.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 10.80...10.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.80
2nd pressure hPa : 290
Rack travel in m: 10.50...10.60
3rd pressure hPa : 230
Rack travel in m: 10.00...10.20

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 700
Del.quantity cm3/ : 135.0...141.0
1000 s: (132.0...144.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 108.0...110.0
1000 s: (105.5...112.5)
Spread cm3 : -
1000 s: (7.50)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.80
Speed rpm : 1195...1210

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.90...5.10
Del.quantity cm3/ : 18.0...24.0
1000 s: (15.5...26.5)
Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

: MAN-NR. 2-7353

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 b4
Edition : 10.02.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 715

Injection pump
Pump designation : PE8P120A920/5LS3804
EP type number : 0 411 828 705
Governor
Governor design. : RQ300/1200PA356
Governor no. : 0 421 801 070

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8280.02.000

1st version kW : 257.4
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 443 022

Opening
pressure, bar : 172...175

Test lines : 1 680 750 060

Outside diameter
x Wall thickness
x Length mm : 8.00X2.00X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Rack travel in mm : 9.00...12.00

NO2

Firing order : 1- 8- 4- 3- 6- 5-
7- 2

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 9.30...9.40

Del.quantity cm3/ : 17.3...17.7

100 s: (17.0...18.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 2.8...3.6

100 s: (2.5...3.9)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 173.0...177.0

1000 : (170.0...180.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 15.8

Testing:

1st rack travel in: 8.30

Speed rpm : 1245...1260

2nd rack travel in: 4.00

Speed rpm : 1280...1310

4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 405...445

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 9.30...9.40
2nd speed rpm : 650
Rack travel in m: 9.30...9.50

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1245...1260

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 b3
 Edition : 10.02.89
 Replaces : 5.85
 Test oil : ISO-4113
 Combination no. : 0 401 848 718
 Injection pump
 Pump designation : PE8P120A920/5LS3804
 EP type number : 0 411 828 705
 Governor
 Governor design. : RQV300...1200PA357
 Governor no. : 0 421 813 188

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8280.02.020

1st version kW : 257.4
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 443 022

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 060

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.00X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00

N04

Firing order : 1- 8- 4- 3- 6- 5-
 7- 2

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200
 Rack travel in mm : 9.30...9.40

Del.quantity cm3/ : 17.3...17.7
 100 s: (17.0...18.0)

Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.9...6.1
 Del.quantity cm3/ : 2.8...3.6
 100 s: (2.5...3.9)
 Spread cm3 : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.10...1.50
 2nd speed rpm : 450
 travel mm : 2.60...3.30
 3rd speed rpm : 900
 travel mm : 5.60...6.00
 4th speed rpm : 1200
 travel mm : 7.90...8.10
 5th speed rpm : 1500
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1230
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del.quantity : 173.0...177.0
 1000 : (170.0...180.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 54...62

Testing:

1st rack travel in: 8.30

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1315...1345

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 340...445

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1240...1250

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 b4
Edition : 10.02.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 848 719
Injection pump
Pump designation : PE8P120A920/5LS3804
EP type number : 0 411 828 705
Governor
Governor design. : RQ300/1200PA356
Governor no. : 0 421 801 070

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8280.02.405

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 443 022

Opening
pressure, bar : 172...175

Test lines : 1 680 750 060

Outside diameter
x Wall thickness
x Length mm : 8.00X2.00X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 8- 4- 3- 6- 5-
7- 2

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 9.30...9.40

Del. quantity cm³/ : 17.3...17.7
100 s : (17.0...18.0)

Spread cm³ : 0.5
100 s : (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 5.9...6.1
Del. quantity cm³/ : 2.8...3.6
100 s : (2.5...3.9)
Spread cm³ : 0.8
100 s : (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 650
Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1200
Del. quantity : 173.0...177.0
1000 : (170.0...180.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 650
Rack travel in mm : 15.8

Testing:
1st rack travel in: 8.30
Speed rpm : 1245...1260
2nd rack travel in: 4.00
Speed rpm : 1280...1310
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 400...440

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1200

Rack travel in m: 9.30...9.40

2nd speed rpm : 650

Rack travel in m: 9.30...9.50

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1245...1260

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 17,2 b6
 Edition : 10.02.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 848 731
 Injection pump
 Pump designation : PE8P120A920/5LS3804
 EP type number : 0 411 828 705
 Governor
 Governor design. : RQV300...1200PA506
 Governor no. : 0 421 813 249

Customer-spec. information
 Customer : IVECO-FIAT

1st version kW : 331.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 443 022

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 060

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.00X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 8- 4- 3- 6- 5-
 7- 2

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 24.3...24.7

100 s: (24.0...25.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.9...2.5

100 s: (1.6...2.8)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.30...1.70

2nd speed rpm : 450
 travel mm : 2.80...3.40

3rd speed rpm : 900
 travel mm : 5.50...5.90

4th speed rpm : 1200
 travel mm : 7.70...7.90

5th speed rpm : 1500
 travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Aneroid pressure h: 700

Del.quantity : 243.0...247.0

1000 : (240.0...250.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 55...63

Testing:

1st rack travel in: 10.60

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1360...1390

4th rack travel in: 1500

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 6...14

Testing:

Speed rpm : 100

Minimum rack travel: 6.50

Speed rpm : 300

Rack travel in mm : 4.90...5.10

CONSTANT REGULATION

Speed rpm : 310...405

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 700

Rack travel mm : 11.60...11.70

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 8.50...8.60

2nd pressure hPa : 435

Rack travel in m: 10.80...10.90

3rd pressure hPa : 350

Rack travel in m: 9.20...9.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 1200

Del. quantity cm³/ : 160.0...164.0

1000 s: (157.0...167.0)

BREAKAWAY

N09

1st version

1mm rack travel less than

full load rack tr: 10.60

Speed rpm : 1240...1250

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

7- 2

Note remarks

Test sheet : FIA 17,2 c1
Edition : 10.02.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 848 736
Injection pump
Pump designation : PE8P120A920/5LS3812
EP type number : 0 411 828 709
Governor
Governor design. : RQV300...1200PA357
Governor no. : 0 421 813 188

Customer-spec. information
Customer : IVECO-FIAT

Engine : 8281.02.001

1st version kw : 257.4
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 443 022

Opening
pressure, bar : 172...175

Test lines : 1 680 750 060

Outside diameter
x Wall thickness
x Length mm : 8.00X2.00X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 8- 4- 3- 6- 5-

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - , : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200
Rack travel in mm : 9.30...9.40
Del.quantity cm3/ : 17.3...17.7
100 s : (17.0...18.0)
Spread cm3 : 0.5
100 s : (0.9)
2nd speed rpm : 300.0
Rack travel in mm : 5.9...6.1
Del.quantity cm3/ : 2.8...3.6
100 s : (2.5...3.9)
Spread cm3 : 0.6
100 s : (0.9)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.30...1.70
2nd speed rpm : 450
travel mm : 2.70...3.40
3rd speed rpm : 900
travel mm : 5.70...6.10
4th speed rpm : 1200
travel mm : 8.20...8.40
5th speed rpm : 1500
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1200
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1200
Del.quantity : 173.0...177.0
1000 : (170.0...180.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 55...63

Setting point:

Speed rpm : 1200

Rack travel in mm : 16.5

Testing:

1st rack travel in: 8.30

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1305...1335

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 300

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 330...430

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30

Speed rpm : 1240...1250

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 k 8
Edition : 03.03.89
Replaces : 2.12.88
Test oil : ISO-4113

Combination no. : 0 401 848 762

Injection pump
Pump designation : PE8P120A320LS3807-10
EP type number : 0 411 828 713
Governor
Governor design. : RQV300...1150PA545-7
Governor no. : 0 421 813 595

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 422 A

1st version kW : 243.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 15.9...16.1

100 s: (15.6...16.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.0...5.2

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.40...1.60

2nd speed rpm : 800
travel mm : 6.00...6.20

3rd speed rpm : 1200
travel mm : 8.00...8.50

4th speed rpm : 1300
travel mm : 9.70...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1230

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150
Aneroid pressure h: 700
Del.quantity : 159.0...161.0
1000 : (156.0...164.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:

1st rack travel in: 9.70
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1250...1280
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 15...23

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 300
Rack travel in mm : 5.00...5.20

CONSTANT REGULATION

Speed rpm : 300...400

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.70...10.80
2nd speed rpm : 750
Rack travel in m: 11.00...11.20
3rd speed rpm : 700
Rack travel in m: 11.00...11.20

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.00...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : 450
Rack travel in m: 10.10...10.20
2nd pressure hPa : 500

N13

Rack travel in m: 10.50...10.70

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del.quantity cm³/ : 173.5...175.5
1000 s: (170.5...178.5)
Spread cm³ : 7.00
1000 s: (12.0)
Aneroid pressure h: 700
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 138.0...140.0
1000 s: (135.0...143.0)
Spread cm³ : 7.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 k 9
 Edition : 03.03.89
 Replaces : 2.12.88
 Test oil : ISO-4113

Combination no. : 0 401 848 763

Injection pump
 Pump designation : PE8P120A320LS3807-10
 EP type number : 0 411 828 713
 Governor
 Governor design. : RQV300...1150PA545-6
 Governor no. : 0 421 813 594

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM422 LA

1st version kW : 276.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 : 4- 1

Phasing : 0-45-90-135-180-225-
 : 270-315

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.50...11.60

Del.quantity cm3/ : 17.5...17.7

100 s: (17.2...18.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.2...2.0

100 s: (0.9...2.3)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.40...1.60

2nd speed rpm : 800
 travel mm : 6.00...6.20

3rd speed rpm : 1200
 travel mm : 8.00...8.50

4th speed rpm : 1300
 travel mm : 9.70...10.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1190

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150
Aneroid pressure h: 700
Del.quantity : 175.0...177.0
1000 : (172.0...180.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 49...57

Testing:

1st rack travel in: 10.50
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1250...1280
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 13...21

Testing:

Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 300
Rack travel in mm : 5.10...5.30

CONSTANT REGULATION

Speed rpm : 300...400

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.50...11.60
2nd speed rpm : 750
Rack travel in m: 11.80...12.00

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.20...10.40

Measurement

Speed 1/min : 500

1st pressure hPa : 410
Rack travel in m: 10.50...10.60
2nd pressure hPa : 490
Rack travel in m: 11.10...11.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del.quantity cm3/ : 187.0...190.0
1000 s: (184.0...193.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 137.0...139.0
1000 s: (134.0...142.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 c 4
Edition : 31.03.89
Replaces : 9.10.87
Test oil : ISO-4113

Combination no. : 0 401 848 789

Injection pump
Pump designation : PE8P110A320LS3842-1
EP type number : 0 411 818 716
Governor
Governor design. : RQ300/1050PA827-3K
Governor no. : 0 421 803 095

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.90...13.00

Del.quantity cm3/ : 13.2...13.4

100 s: (12.9...13.6)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.8...9.0

Del.quantity cm3/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.30...1.50

2nd speed rpm : 500
travel mm : 5.50...5.70

3rd speed rpm : 900
travel mm : 6.90...7.20

4th speed rpm : 1050
travel mm : 7.60...7.90

5th speed rpm : 1100
travel mm : 10.10...10.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 14.70...15.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 132.0...134.0
1000 : (129.5...136.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 15.2

Testing:

1st rack travel in: 11.90
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 8.9

Testing:

Speed rpm : 200
Minimum rack trave: 10.50
Speed rpm : 300
Rack travel in mm : 8.80...9.00
Rack travel in mm : 2.00
Speed rpm : 450...490
Speed rpm : 550
Maximum rack trave: 1.80

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 12.90...13.00
2nd speed rpm : 600
Rack travel in m: 12.90...13.10
3rd speed rpm : 900
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 119.0...122.0
1000 s: (116.0...125.0)
Spread cm3 : 8.00
1000 s: (11.0)
Speed rpm : 900
Del.quantity cm3/ : 130.0...134.0
1000 s: (127.0...137.0)
Spread cm3 : 8.00
1000 s: (11.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 c 3
 Edition : 09.06.89
 Replaces : 9.9.88
 Test oil : ISO-4113

Combination no. : 0 401 848 790

Injection pump
 Pump designation : PE8P110A320LS3842
 EP type number : 0 411 818 714
 Governor
 Governor design. : RQ300/1050PA187-17
 Governor no. : 0 421 801 410

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 192.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.50...11.60

Del.quantity cm3/ : 11.7...11.9

100 s: (11.4...12.1)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.6

Del.quantity cm3/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 13.20...14.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 117.0...119.0

1000 : (114.5...121.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 13.7

Testing:

1st rack travel in: 10.50

Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1145...1175
4th rack travel in: 1300
Speed rpm : 0.00...1.50

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.9

Testing:

Speed rpm : 200
Minimum rack trave: 9.00
Speed rpm : 300
Rack travel in mm : 6.80...7.00
Rack travel in mm : 2.00
Speed rpm : 400...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 98.0...102.0
1000 s: (95.0...105.0)
Spread cm3 : 8.00
1000 s: (11.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 d 5
 Edition : 14.04.89
 Replaces : 11.11.88
 Test oil : ISO-4113

Combination no. : 0 401 848 793

Injection pump
 Pump designation : PE8P110A32OLS3842
 EP type number : 0 411 818 714
 Governor
 Governor design. : RQV300..1050PA524-12
 Governor no. : 0 421 813 679

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 192.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.50...11.60

Del.quantity cm3/ : 11.7...11.9

100 s: (11.4...12.1)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.7

Del.quantity cm3/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.20...1.50

2nd speed rpm : 800

travel mm : 5.60...6.00

3rd speed rpm : 1110

travel mm : 7.80...8.40

4th speed rpm : 1150

travel mm : 8.80...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 117.0...119.0

1000 : (114.5...121.5)

Spread cm3 : 4.00
1000 : (8.00)

Remarks:

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:

1st rack travel in: 10.50
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1135...1165
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control Lever
position degrees: 18...26

Testing:

Speed rpm : 200
Minimum rack travel: 10.50
Speed rpm : 300
Rack travel in mm : 8.40...8.70

CONSTANT REGULATION

Speed rpm : 300...450

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 98.0...104.0
1000 s: (95.0...107.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

N21

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 d 6
Edition : 29.03.89
Replaces : 1.7.88
Test oil : ISO-4113

Combination no. : 0 401 848 795

Injection pump
Pump designation : PE8P110A320LS3842
EP type number : 0 411 818 714
Governor
Governor design. : RQV300..1050PA884-1
Governor no. : 0 421 813 686

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 12.70...12.80

Del.quantity cm³/ : 12.6...12.8

100 s: (12.3...13.0)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.8

Del.quantity cm³/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.10...1.40

2nd speed rpm : 800

travel mm : 5.80...6.20

3rd speed rpm : 1100

travel mm : 8.20...8.60

4th speed rpm : 1150

travel mm : 9.10...9.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1085

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 126.0...128.0

1000 : (123.5...130.5)

Spread cm³ : 4.00
1000 : (7.50)

Remarks:

RATED SPEED

1st version
Control lever
position degrees: 53...61

Testing:
1st rack travel in: 11.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 18...26

Testing:
Speed rpm : 200
Minimum rack travel: 10.00
Speed rpm : 300
Rack travel in mm : 6.80...7.00

CONSTANT REGULATION
Speed rpm : 300...400

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 1050
Del.quantity cm³/ : 136.0...140.0
1000 s: (133.0...143.0)
Spread cm³ : 7.00
1000 s: (10.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

N23

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAO 14,5 b
 Edition : 21.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 848 803
 Injection pump
 Pump designation : PE8P120A520/4LS3850
 EP type number : 0 411 828 723
 Governor
 Governor design. : RQV250...900PA668-8
 Governor no. : 0 421 813 742

Customer-spec. information
 Customer : DAEWOO

Engine : D 2848 TI

TEST BENCH REQUIREMENTS

Test oil
 inlet temp., °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)

Rack travel in mm : 9.00...12.00

Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 19.9...20.1

100 s: (19.6...20.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.30...1.70

2nd speed rpm : 650

travel mm : 5.80...6.20

3rd speed rpm : 900

travel mm : 7.80...8.00

4th speed rpm : 1200

travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 940

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 199.0...201.0

1000 : (196.0...204.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

Navy

1st version

Control lever

position degrees: 64...72

Testing:

1st rack travel in: 10.00

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 1030...1060

4th rack travel in: 1150

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 415...475

START CUT-OUT

Speed 1/min : 220 (240)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00

Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 185.0...205.0

1000 s: (181.0...209.0)

LOW IDLE

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Del.quantity cm3/ : 17.0...23.0

1000 s: (14.0...26.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

APPLICATION

N25

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DA0 14,5 b1
Edition : 23.06.89
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 848 803
Injection pump
Pump designation : PE8P120A520/4LS3850
EP type number : 0 411 828 723
Governor
Governor design. : RQV300...900PA668-8
Governor no. : 0 421 813 742

Customer-spec. information
Customer : DAEWOO

Engine : D 2848 TI

TEST BENCH REQUIREMENTS

Test oil
inlet temp., °C : 38...42
Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00

Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - , : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 900
Rack travel in mm : 11.00...11.10
Del.quantity cm³/ : 19.9...20.1
100 s : (19.6...20.4)
Spread cm³ : 0.5
100 s : (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 5.9...6.1
Del.quantity cm³/ : 1.7...2.3
100 s : (1.4...2.6)
Spread cm³ : 0.8
100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.30...1.70
2nd speed rpm : 650
travel mm : 5.80...6.20
3rd speed rpm : 900
travel mm : 7.80...8.00
4th speed rpm : 1200
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 940
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Del.quantity : 199.0...201.0
1000 : (196.0...204.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 64...72

Testing:
1st rack travel in: 10.00
Speed rpm : 940...950
2nd rack travel in: 4.00
Speed rpm : 1030...1060
4th rack travel in: 1150
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 415...475

START CUT-OUT

Speed 1/min : 220 (240)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.00
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 185.0...205.0
1000 s: (181.0...209.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

APPLICATION

N27

Navy